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3dcreative

All Aboard

Read our latest interview with the talented 3D Artist, Marek Denko, and find out why he believes finding good reference material is the "key" to creating stunning images! ...



Articles
'Scream', Axis Animation's Grid, plus more!



Interviews
Marek Denko. Neil Maccormack and Shilo



Galleries
Simon Reeves, Pedro Conti and Chris Wilson, plus more!



Making Of's
'Voice' by Chris Carter, plus more!



Tutorials
NEW: Bugatti Veyron Car Modelling Tutorial Series, plus more!



Editorial

Welcome to Issue 31! We managed to track down the extremely talented, and equally busy, Marek Denko this month for an in-depth interview about his life and work for this issue. Marek's work never fails to impress us, so have a wander over to PAGE 008 to see some of his work – both old and 'hot off the press' – and get yourself inspired for some hyper realistic CG creation! We've also had the great pleasure of catching up with Neil Maccormack, of Bearfoot Films, for this month's issue, so flick to PAGE 025 to see his fantastic sci-fi/fantasy artwork and read all about how he found himself in Geneva after growing up in little ol' England! Our third interview this month is with the boundary-pushing studio, Shilo – check out PAGE 018 to find out what these guys are working on now and what they've been up to, and how Shilo all came about in the first place! Our ZBrush and Bugatti Veyron Tutorials are still going strong this month, and we have ourselves an instrument-based Making Of theme going on with some great contrast, with the making of an electric guitar by Alexander Nadein (PAGE 094) and a classical violin by Chris Carter (PAGE 104). So if you too have a passion for music and have always fancied modelling yourself a banjo, bass, or even a kazoo (why not?), and setting it in a stunning/dramatic environment, then get stuck into these Making Ofs and try it our for yourself! What's stopping you? Have fun, enjoy this month's issue and catch you next month! Ed.

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What took you so long!?
Marek Denko | www.marekdenko.net
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Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!









Setting up your PDF reader

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

To view the many double-page spreads featured in 2DArtist magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. Open the magazine in Reader;
2. Go to the VIEW menu, then PAGE DISPLAY;
3. Select TWO-UP CONTINUOUS, making sure that SHOW COVER PAGE is also selected.

That's it!

Contributing Artists

Every month, many creative and talented artists around the world contribute to 3DCreative Magazine. Here you can read all about them. If you would like to be a part of 3DCreative or 2DArtist Magazines, please contact lynette@zoopublishing.com.

Our new car modelling tutorial series, Bugatti Veryon, brings a group of new talented artists to 3DCreative Magazine. These wonderful people are responsible for creating our 3ds Max, Cinema 4D, LightWave, Maya & Softimage XSi content this month!





Craig A. Clark



Having worked on a wide range of projects, including games (Powerdrome, 8 Days, and Motorstorm), music videos (Muse: Sing for Absolution) and feature films (Goal 2, Harry Potter, Underdog, and The Golden Compass), Craig has a broad range of experience. Throw in commercials/product visualisations and the range is greater still!

http://www.f-nine.co.uk caclark@f-nine.co.uk

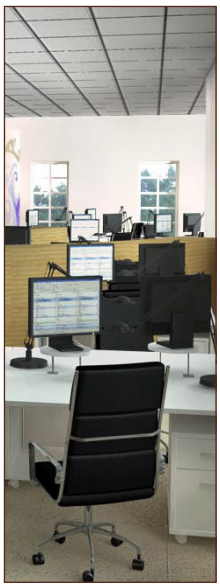


Ali Ismail

is a 3D artist who has worked on everything from Hollywood movies to TV commercials to games. He started out by doing the first 3D games in Jordan, then freelanced to clients such as Microsoft and VW, and has also worked for ILM on projects such as Indiana Jones and the Kingdom of the Crystal Skull whilst at Lucasfilm Animation Singapore.

http://www.aliismail.com/ ali@aliismail.com





Emlyn Davies



is a 27 year old freelance 3D artist, based in Birmingham, UK. He has four years experience in Cinema 4D and has freelanced mainly at Cadbury as a 3D consultant for most of his professional career. Passionate about all things 3D, he constantly strives to develop his expertise and blur the boundaries between the real and the digital world.

http://www.cr8ivity.co.uk info@cr8ivity.co.uk

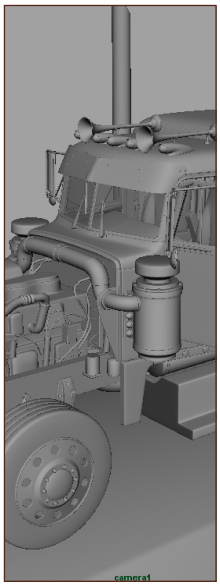


Krisztián Szeibold

is a 3D Artist living in Budapest, Hungary. In 2000, he started using 3D software such as 3D Studio R4, and later 3ds Max and Maya. He's currently working as a 3D Artist on post-productions and commercials with Softimage XSI and Fusion. He hopes that he's going to be able to work on feature films in the future.

http://www.oryon.extra.hu/
szkoryon@gmail.com





Andrew Hobson



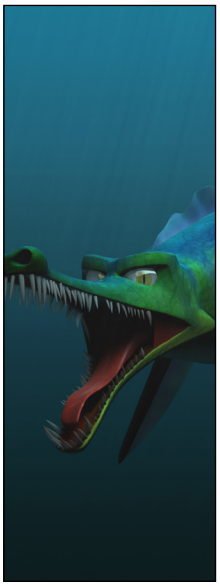
has been using 3D software for about 4-5 years, mainly as a hobby, and enjoys developing his skills through various tutorials and courses. He's most proficient at modelling, especially vehicles, but is looking to develop his organic modelling, particularly humans/fantasy figures. He would love to work in the film or games industry (especially on the Nintendo Wii) so he can further develop his skills. andrewhobson2@gmail.com

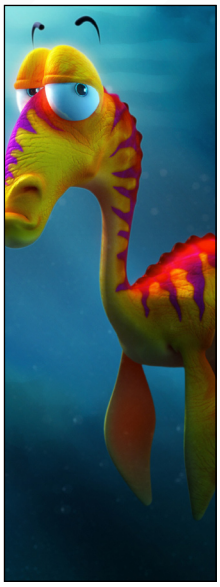


Jirka Šiška

began playing with 3D at high school, and now studies Architecture in Prague. At the moment he's just a hobbyist, but he hopes to one day work in the film industry. His main skill is modelling, but he's also currently developing his skills in rigging and animation. He really enjoys, and is enchanted by, the capabilities of today's computer art.

jirka_siska@yahoo.com





Carlos Ortega

is a 26-year old graphic designer and has been working in 3D for about 4 years. He's currently working in the TV department of Guanajuato University doing graphic design and 3D animation for TV spots and documentaries. He's also a multimedia freelancer and a shortfilm hobbyist with a production house called TG Productions. http://www.zigrafus.com.mx

strogg_tank@hotmail.com





Wayne Robson

is a very successful freelance digital sculptor living in Durham, England. Wayne is currently dividing his time between work on an upcoming creature documentary and his upcoming extensive book on ZBrush for Wordware publishing. Wayne's best selling DVDs on ZBrush and Mudbox are available through Kurv Studios.

http://www.dashdotslash.net

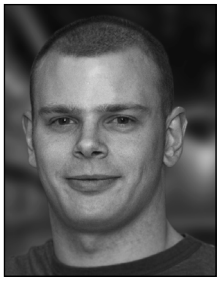
wayne@dashdotslash.net





Chris Carter

joined the US Air Force in 2000, and discovered 3D two years ago when he was assigned to the 367TRSS at Hill Air Force Base, Utah, where they make e-learning titles. He's also in college earning his Computer Science degree. He enjoys spending every free moment working with 3ds Max and ZBrush. He also toys with Maya and XSI and wants to one day model for films and games. cg.carter@comcast.net

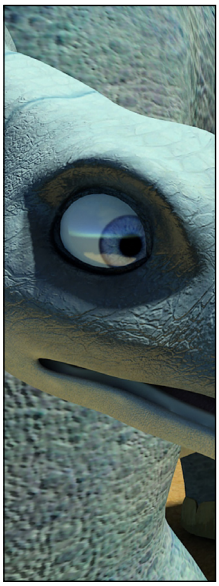




Alo Álvarez

has been a 3D freelancer since 2004, mainly working with advertisements and video-games. He's also worked in studios for cinema and TV production. Self-taught, he began playing with 3D at 14 using 3D Studio 3.0 under MS-DOS. His professional ambition is animation cinema, but as a personal expression he likes working on conceptual images that transmit feelings and thoughts.

www.aloalvarez.com contact@aloalvarez.com



Would You Like to Contribute to 3DCreative or 2DArtist Magazine?

We are always looking for tutorial artists, gallery submissions, potential interviewees, Making Of writers and more. For more information, send a link to your work here: **lynette@zoopublishing.com**

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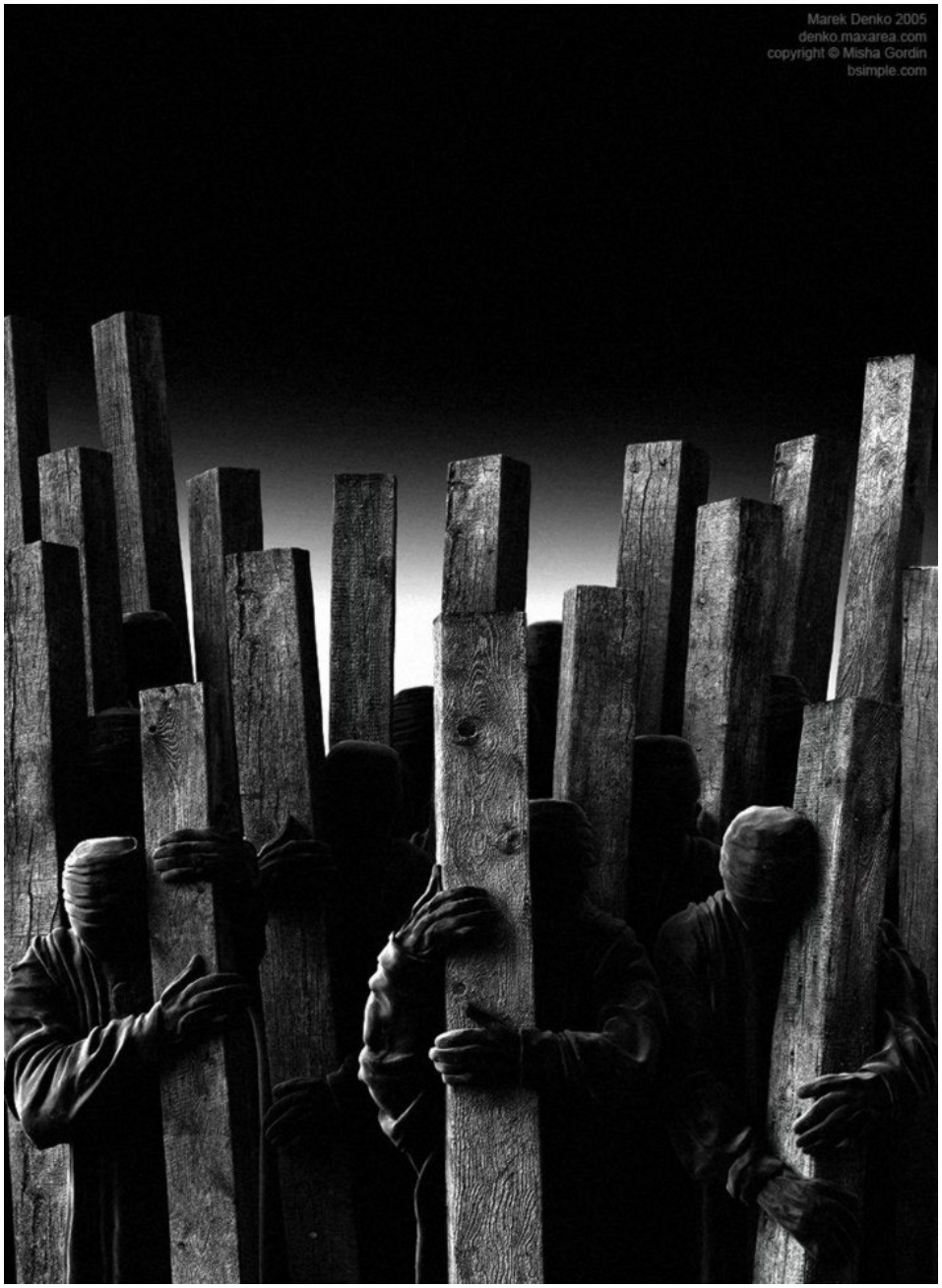
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It's hard to be interested in CG and not have seen any works by Marek Denko. His images are sought-after in the many CG galleries on the net, often being listed at the top of the 'most viewed' rankings. Being incredibly busy with his freelance work, he still helps the community with his 'making of' tutorials and (if pestered enough) will even provide an interview...

Marek Denko



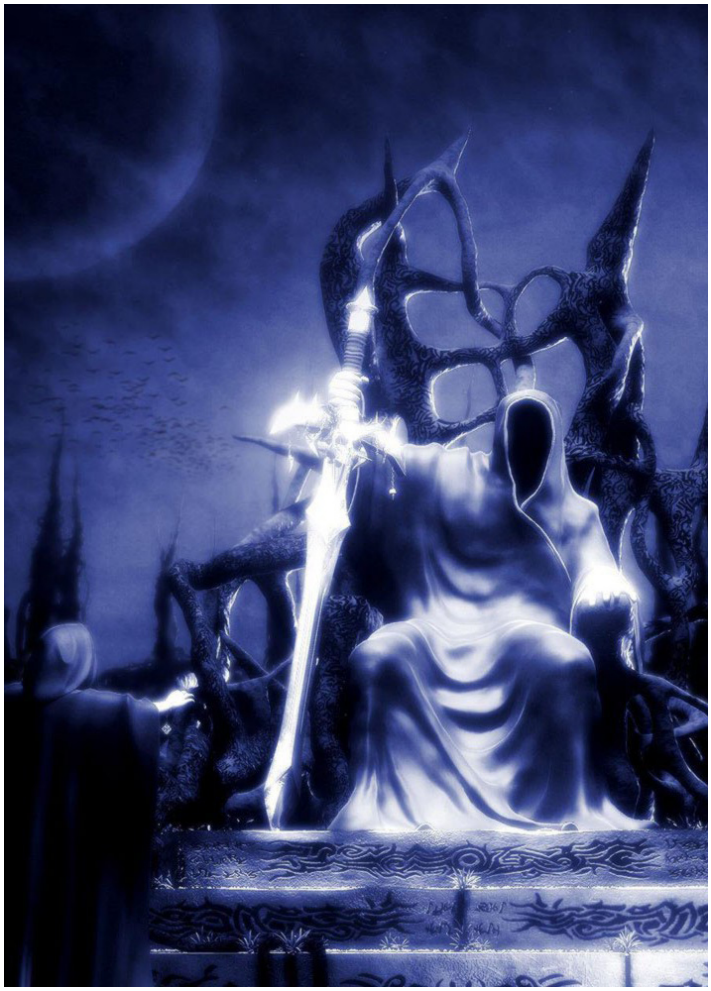
Hi Marek, thanks for your time. Can we start with just a quick introduction and a bit about yourself for the readers please.

My name is Marek Denko. I was born in 1980 in a small town in the central part of the Slovak Republic. I've been interested in many different forms of art since I was a child, when I did painting, drawing, played the guitar and even tried to compose music. When I was attending high school in the historic city of Banska Stiavnica, my mother bought me my first personal computer and it wasn't long before I started to discover the secrets of computer graphics.

I went on to study at Brno University of Technology in the Czech Republic and after I graduated, I started to work with Jan Rybar's Imagesfx. This was followed by a move to Italy, where I worked on the CG movie Dear Anne,







The Gift of Hope. After my son was born, I decided to work as a freelancer from home, so that I could see him grow up and spend more time with my family - which is what I'm still doing now.

What are the main differences coming from studio work to working from home? In terms of finances, motivation and self-discipline?

I get to spend more time with my family. I get to decide what I work on and how much time I spend on what. I'm being careful with my schedule, looking for freelance work etc. Everything has positive and negative sides... Nothing is just black or white, but for now I'm happy at home. Maybe in two months I'll be somewhere in the studio with lot of people around... who knows.

You have so many great images chosen for so many books, galleries and awards. Which ones really stand out for you and why?

Thank you. It's not an easy question to answer, to be honest. Each of my images is connected to a particular time in my life, so each one is special in some way. But if you really force me to choose one, it would be 'Street of Memories'. I put more from my personal life into this one than people realise. It contains lots of elements that reflect times and places from my life.

.

So would you say your personal gallery is almost a way of expressing a diary of things that have happened in your life?

Some of them, yes, but I wouldn't call it a "diary". When I look at my


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denko.maxarea.com



images I know exactly what I was doing at the time when I was creating them; I know where I lived, what music I was listening to, what projects we were working on at the studio etc.

What has been your greatest artistic achievement in your life so far?

My little son of course! You know, I never think that way... artistic achievement.. I really don't know what to say. If you ask me about my carear achievement it would be that I was chosen as Autodesk 3ds Max Master 2007. It was a really great honour for me.

You seem to enjoy recreating beautiful lighting to great effect, such as dramatic skies and rich sunsets. Can you tell us some of your secrets in producing these and what software you favour for your lighting work?

Most of these dramatic sky and sunset looks are done in postproduction when I'm playing with images in Photoshop or Fusion or wherever. There are really no secrets about it, I just take one colour corrector and play with colours, then I take another one, another, two more and then it's done. I end up with 15 layers of corrections!

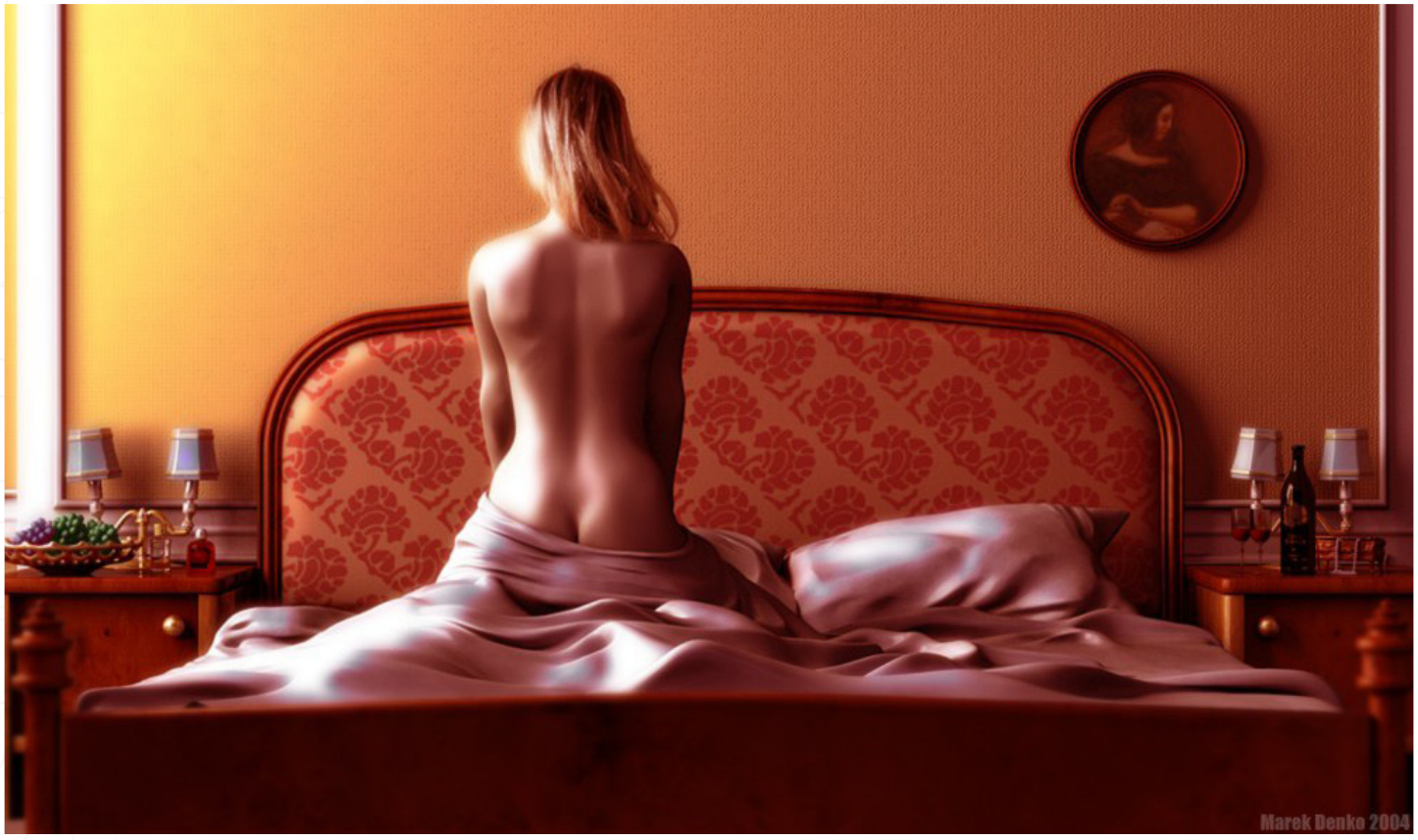


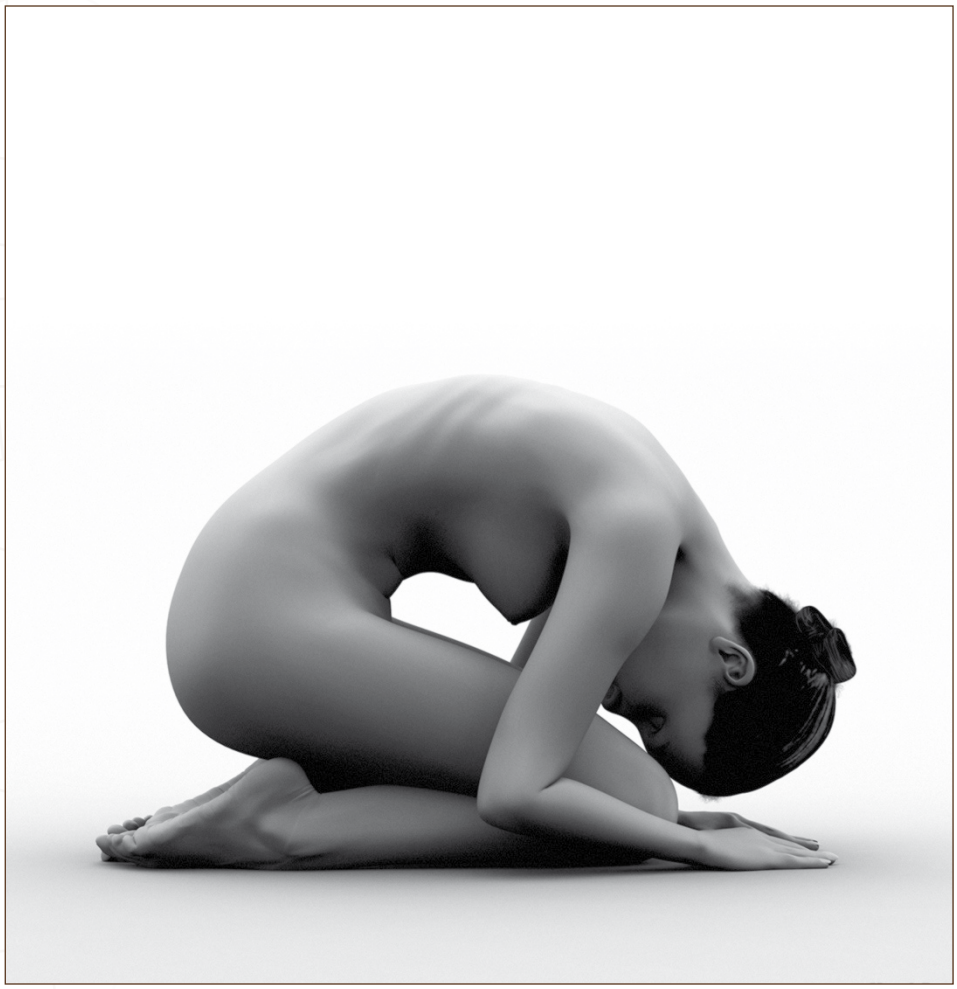
Yes I see, but do you have to make the initial render with the final result in mind? Or can you really change the whole look of the image in post if you want to?

Usually I know from the start what look I'd like to have at the end, but I also know what it's possible to do with images in postproduction. Someone can ask me: "But why are you putting so much detail into your models even when they are in the background". My answer to that is: "Because I want them to be detailed". I'm using my models in other professional projects and sometimes I just don't know exactly where an object will be placed. I just know that I want it there.

Can you tell us a bit about how photography plays a part in your CG? Does it help you in general with things like perfecting compositions?

I use a lot of photographs as references. For me personally, photographic references are a really important starting point when I'm creating my





images. Usually I spend several hours searching through the internet and my photo library, trying to find the best references. If it's needed, I'll often just go outside to take new pictures. I never underestimate this part of work. In reference photos you can find lots of interesting details that are harder to realise if you don't see them directly. They're also very helpful when it comes to modelling, texturing and shading.

We always seem to ask the question 'what advice do you have for our student readers?' but I would like to ask you if you have any recommendations for things art students should NOT do!?

They shouldn't be spending whole days on some CG forum asking questions. They should use their own resources, really think about what their struggling with and do their own research to find the solutions to their problems.

However in the end I'm not a teacher or someone who is in position to lead someone. Everyone is different and that's what makes the wonderful world of art so interesting!

Marek Denko

For more work by this artist please visit:

http://marekdenko.net

Or contact them at:

marek.denko@gmail.com

Interviewed by: Tom Greenway





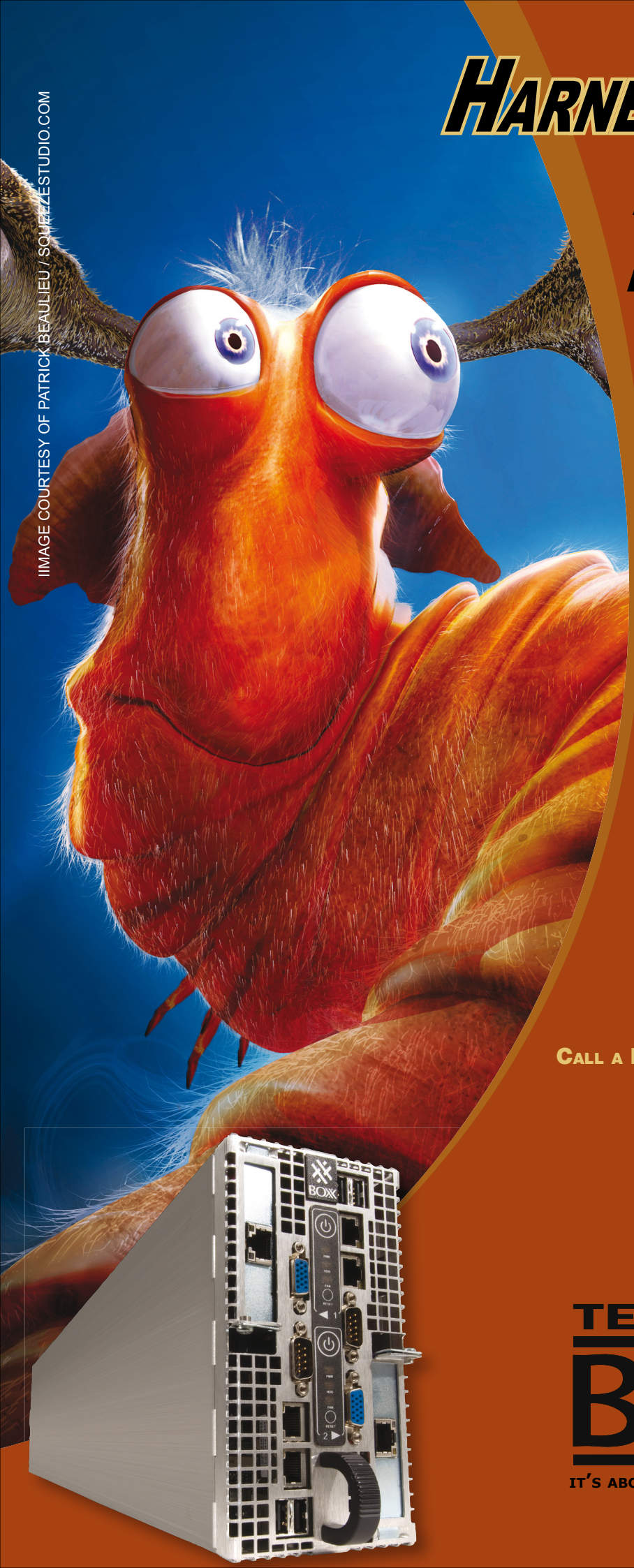


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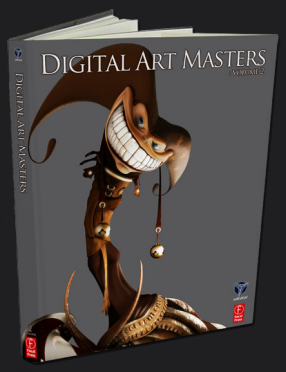
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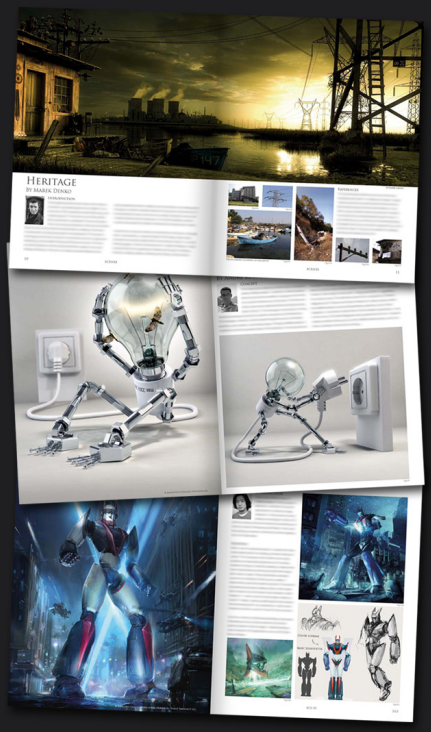
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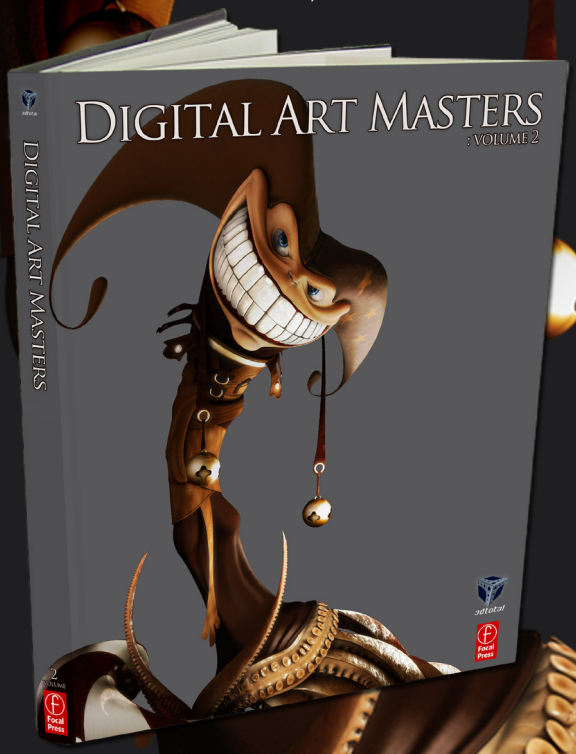
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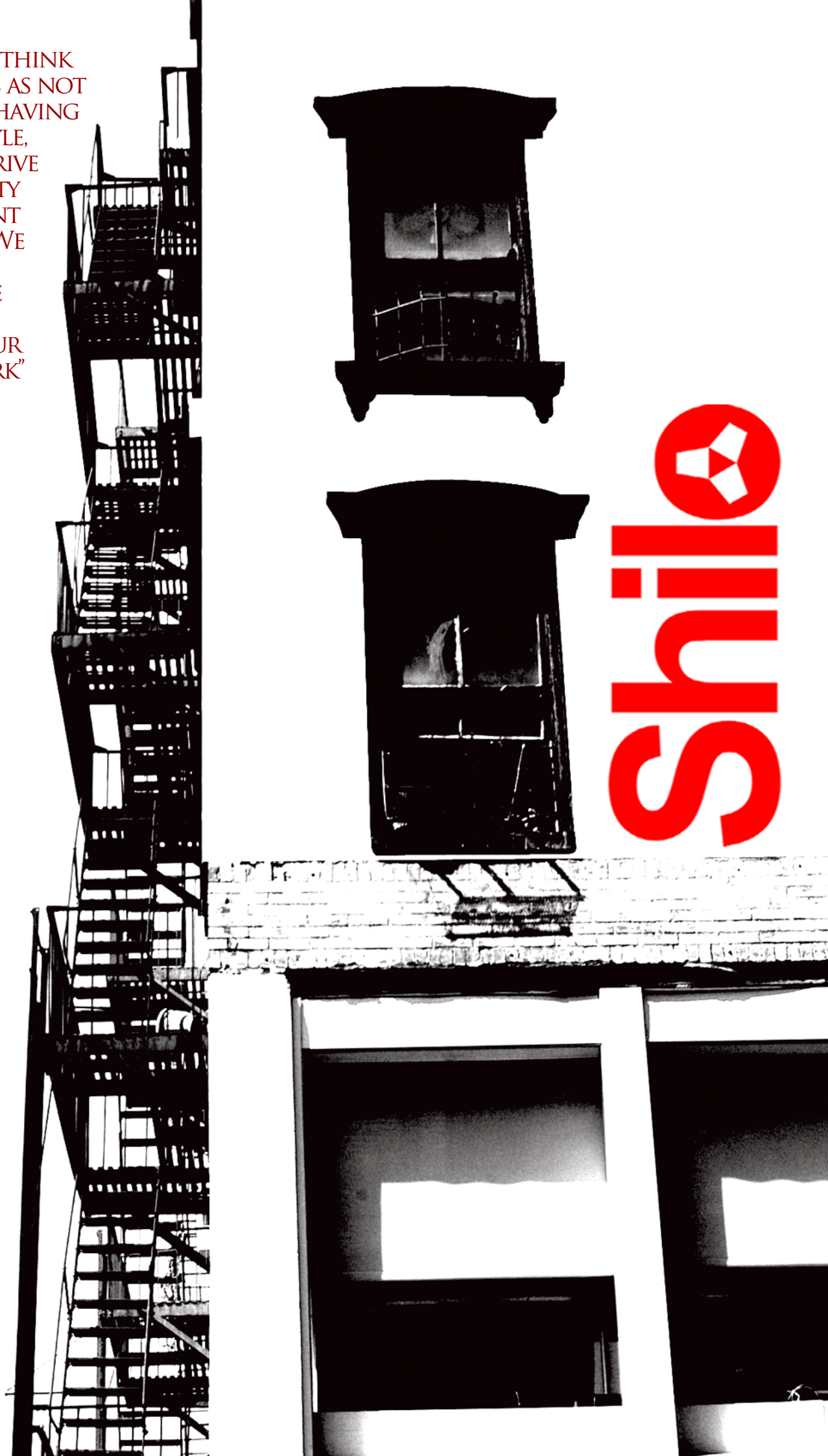
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"We tend to think of ourselves as not necessarily having a specific style, per se. We strive for creativity and excellent execution. We think those qualities are definitely shared in our body of work"



shilo

Shilo's daring band of directors, designers, and artists strive to push the boundaries of contemporary commercial production, and strike a nerve in an increasingly numb audience. Co-founded by Jose Gomez and Andre Stringer, Shilo is distinguished by its passion for "design-infused storytelling".

Shilo





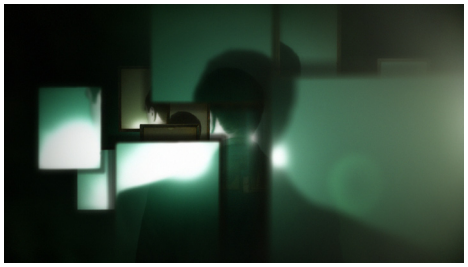
Can you tell us a bit about the history of Shilo, when and who founded the company and how it has grown?

Shilo was started by Creative Directors Jose Gomez and André Stringer in 2001. The two met while working on a major skateboarding film. Jose's background in branding and action sports mixed with André's experience in filmmaking, hip-hop and street culture to lay the foundation for what Shilo has become. In 2003, Tracy Chandler came on board as Executive Producer.

We have two studios, one in New York City and the other in Del Mar, California. Our capacity and ability to generate ideas and handle all aspects of production (including directorial), from concept through to completion has grown dramatically over the years.

In 2005, we created the main title sequence for Showtime's 'Huff', which garnered us an Emmy® for Outstanding Main Title Design. We recently spearheaded projects for carmaker







Scion and Cartoon Network, while also putting out some personal, more experimental work such as 'The War'. In addition to our commercial work, we continue to flex our creative muscles. In 2007, we launched our very first book (with accompanying DVD), called 'We Make It Good'. We also set up a gallery website last year (**http://www.wemakeitgood.com)** where we post more than just our published work. We showcase behind-the-scenes images, projects that we

thought were cool but didn't publicise, and other miscellaneous projects.

We have a passion for "design-infused storytelling" and this influences everything we direct, whether it be live action, design, animation, music or sound design.

We've worked with clients such as BBDO, CP+B, HBO, Modernista, MTV, Nike, Showtime and Y & R.

Can you tell us a bit about your pipeline, staff and departments? How does a typical project progress through the studio from start to completion?

By working with a strong conceptual summary, we are always able to begin any project with big-picture development, which remains a large focus throughout the project. We ask ourselves how we can make all aspects of how we execute the project relate and reinforce the main point of the spot. We do this whether the piece has a strong narrative or is more loose and conceptual. We try to do as much preparation as possible before shooting and post. Even then, we always have room to change as ideas develop during the project.

The company consists of a large array of people and skill-sets. Every member of our team is a contributor. It doesn't matter what the specific role is (producer, cg animator, designer, live-action director, etc); every person plays a role in the development of concepts and the execution

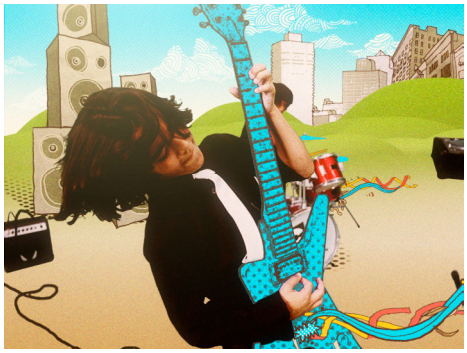















Shilo
Creative Production Studio



of ideas. We have a very open and collaborative atmosphere here. Any idea is open to being heard.

What current cool projects are you working on now?

We just wrapped up some additional work for Cartoon Network. Working with the network has been a really great experience; they give us so much freedom to explore new ideas. We also just finished up some additional spots for ATTIK and Scion. Working with the deviants has been a blast. Both of these projects have allowed us to further develop our existing relationships with our clients. We love to keep a good thing going.

Studying your previous projects on your site http://www.shilo.tv/ such as 'Scion Pit Stop', 'Cartoon Network', 'Sears Tools' and 'City of Good' it appears you have developed your own style, which I can best describe as a mix of traditional 2d textures over 3d models with a good mix of graphical elements thrown in (Readers - just watch some of them yourself ok!) I know a lot of individuals strive to a style unique to themselves, but did you set out to try and achieve this as a company?

We tend to think of ourselves as not necessarily having a specific style, per se. We just strive for creativity and excellent execution. We think













those qualities are definitely shared in our body of work. We do have a lot of live-action work mixed with design and compositing, as well as a fair amount of CG work with character animation. I guess those are just things we enjoy doing. Maybe the use of those execution techniques may be considered a style? The

only thing we are consciously doing is trying to push ourselves at each chance we get. We try to not compare ourselves to the world; we just work with what inspires and challenge us. Every time we get a new opportunity, we ask ourselves, "How do we direct this to tell the story in a striking way?" We're not really thinking of how to make something look like a Shilo piece.



What do you do in your studio for fun when things get a bit intensive and people need to take five?

We try to go out during the day and refresh, whether it's by grabbing a coffee or going for a walk. It's easy to get in a rut sitting behind the computer all day. We encourage everyone to get up and go outside! We also take trips together to go play paintball, snowboard or skateboard.









In the history of Shilo, has there been any one particular memorable moment or one particular event that boosted the company to the next level?

Winning the Emmy® for 'Huff' was a big deal for us. It happened right when we were starting out, so it put us on the map and helped people



notice our work. Another big initiative for us was our book, We Make It Good, which came out last year. We're not sure if it made waves in the industry, but it was definitely a great project for us internally. We love working on experimental and non-commissioned work because it helps us to exercise our creative muscles. We always try to keep a priority on creative outlets, so this was a big milestone for us.



SHILO

For more work by this artist please visit:
http://www.shilo.tv
Or contact them at:
joanne@doubleecomms.com
Interviewed by: Tom Greenway







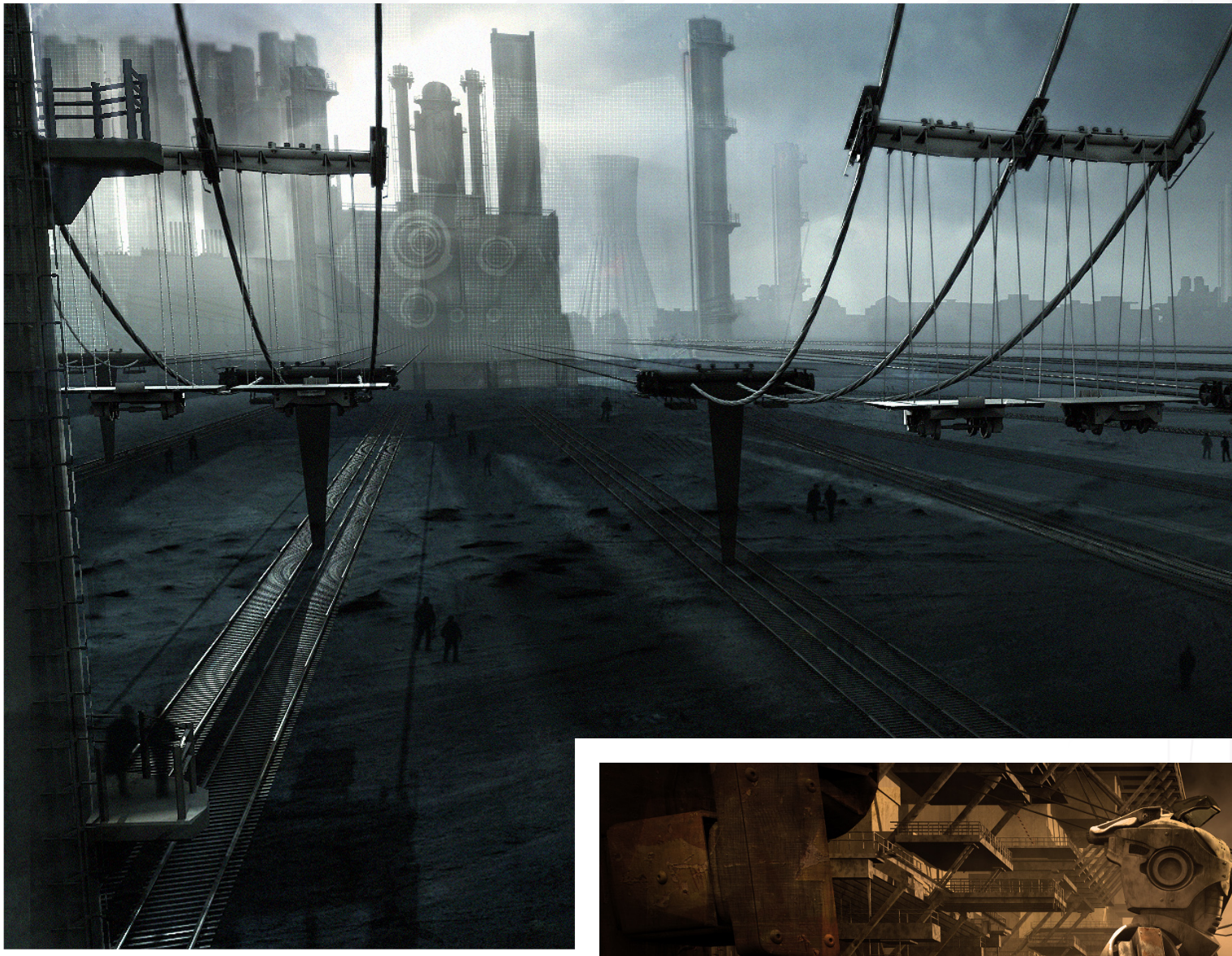




"…TEXTURING IS MY FAVOURITE TASK BECAUSE IT GIVES ME THE OPPORTUNITY TO PAINT IN PHOTOSHOP, WHICH IS SOMETHING I REALLY ENJOY…"

NEIL MACCORMACK

Driven by his passion for 3D, Neil Maccormack has set up BearFootStudios and become a freelance 3D artist in Geneva. We chat with Neil about why he left sunny old England to bask in the beauty of Geneva and what has lead him to becoming the artist he is today.





NEIL MACCORMACK

Hello Neil, could you tell us a bit about yourself please?

My name is Neil Maccormack. I am a freelance 3D artist and concept designer from England who is currently living in Geneva, Switzerland.

What first got you hooked on 3D?

I was first exposed to 3D graphics when I was studying computer science at university, but I have been interested in graphics of all types, and art in general, from an early age. I was playing around with early versions of Lightwave 3D at university, but it wasn't until much later that I found myself creating my own artwork. After receiving positive feedback for it, I began to realise that this is what I wanted to do with my life.





So how did an English boy end up working in Geneva as a freelance artist?

Via the wonderful world of advertising. When I left university, I started out working for an agency and doing a mixture of IT and graphic work. After many years of learning, studying and teaching myself 3D, I was offered a similar advertising role for the same agency, but in Switzerland. So I made the move and continued my work as before. After even more soul destroying years still in the advertising business, I finally made the switch to freelancing and I haven't looked back since.

Browsing through your online portfolio, you can't help but notice the quality of the texturing that your scenes have. Is this an area that you focus on the most?

In general, yes I would say so. My animation skills are very basic (meaning rubbish!), so I would say my strengths are modelling, texturing and composition (lighting and rendering). Texturing is my favourite task because it gives me the opportunity to paint in Photoshop, which



is something I really enjoy. I'm basically a frustrated 3D artist who jumps at the chance to use 2D tools at any opportunity.

Now that you mentioned your fondness for using Photoshop, it clears up why you have a few matte paintings in your portfolio. But why Matte Painting?

Basically I love the realism of Matte Painting, and the integration of 2D and 3D elements. For me, seamlessly integrating futuristic 3D elements into a believable 2D environment is something I try to focus on, as I think it adds that something extra to the entire scene

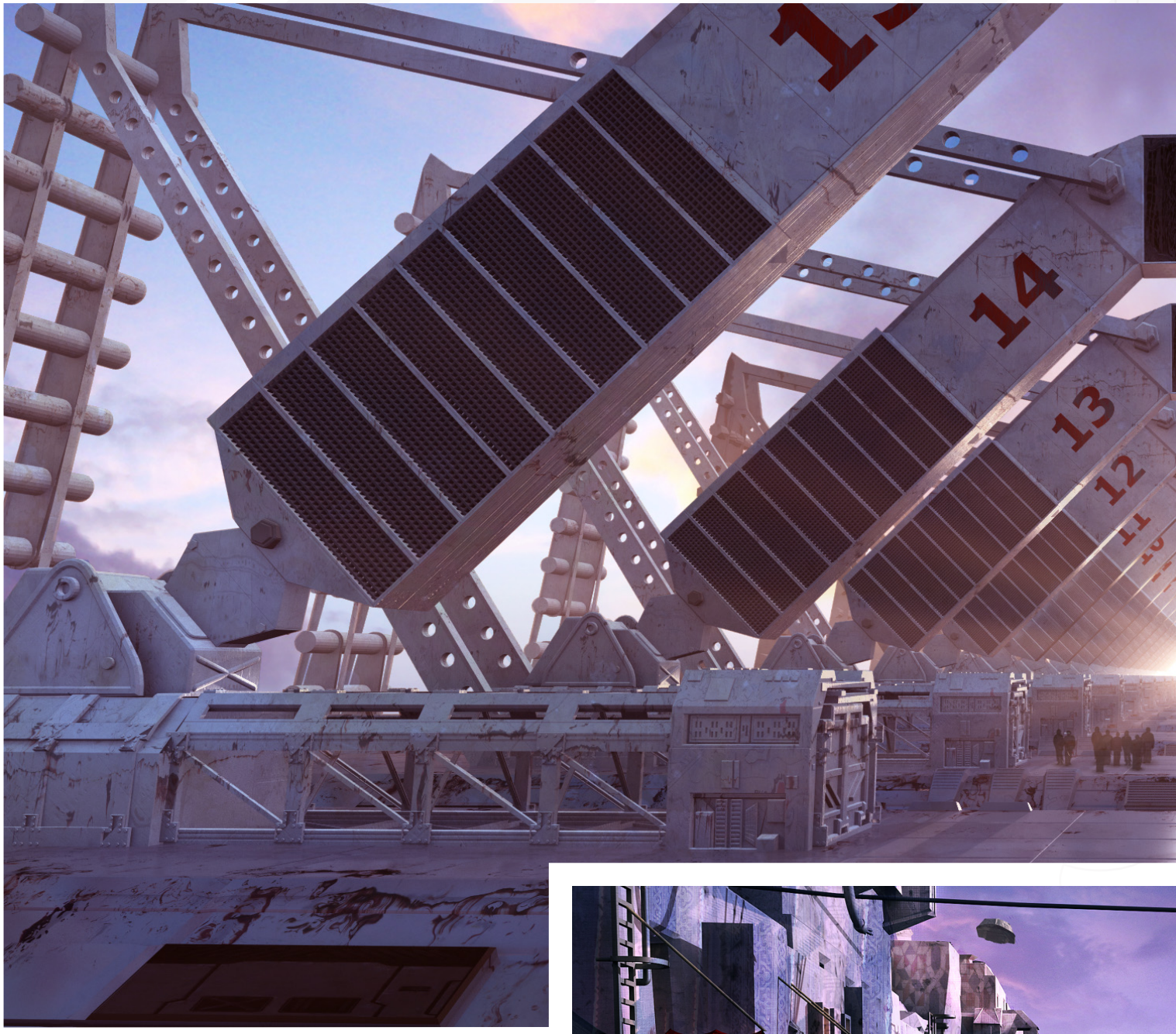




Your interest in Sci-Fi shows somewhat in your work. What is it about this particular genre that interests you?

I think it's because of the pure creative freedom that the genre allows you to have. You're only restricted by your imagination. Basically what you can design, create and invent is limitless.


EVERLAST



So apart from the Sci-Fi genre, is there any other area that interests you?
Fantasy definitely. The Lord of the Rings trilogy really boosted my interest in that area, but I'm basically absorbed by anything that is creative, innovative and has that something extra either in style or story

So what are you working on at the moment?
At the moment I have been rushing to finish two portfolio pieces for the Expose 6 book and an extensive "Making of" tutorial for the Digital Art Masters: Volume 3 book.

If you could sum up your style of work in one sentence, what would it be?
I would say its retro futuristically industrialized steam punk-esque urban modernism







Throughout an artist's career, they will always look at artwork by their favourite artist, whether it's for research or inspiration. So where do you find inspiration from?

I draw inspiration from everywhere. Music, films, books, magazines and of course, other 3D and 2D artists. I love the work of Loic Zimmerman, Pascal Blanche, Sparth, JS Rossbach, Craig Mullins and many others.

It's interesting that you've listed more 2D artists than 3D. Do you think you would ever make the cross-over and leave the way of the 3D artist behind?

No, it's very unlikely. I would like to see myself merging the two styles a lot more, but I think my skill lies in 3D and for the moment that's where I'm gaining most of my experience and enjoyment. With new software and

techniques being developed all the time, there is always something new to learn and something to discover in 3D.



Well it's been a real pleasure chatting with you. One last question before we wrap things up: If I were to hang around with you for a whole day, what would I learn most about you?

(Laughs) I couldn't imagine someone wanting to hang around me for a day. But seriously, I think you would learn how passionate I am about my work and how dedicated I am to it. I'm in the



very lucky position of doing something that I love and (sometimes) getting paid for it.

Neil MacCormack

For more work by this artist please visit:
http://www.bearfootfilms.com/
Or contact them at:
neil@bearfootfilms.com

Interviewed by: Chris Perrins

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"I LIKE TO SIMPLY LIE DOWN IN THE AFTERNOON AND DRIFT INTO A VERY SHALLOW SLEEP WHERE I'LL LET THOUGHTS AND IDEAS INTERWEAVE OF THEIR OWN

WHEN YOU'RE DOWN, WHAT CAN FIRE YOU UP?

This month, we have asked 3D artists from a variety of backgrounds and locations around the world:

WHEN YOU'RE RUNNING LOW ON MOTIVATION, WHAT CAN FIRE YOU UP?

Here's what they said...

When you're down on motivation, what can fire you up?

Adrian Tiba

System Engineer, SC Infologic

Oradea, Romania

When I am down on motivation, I take a break, or go to the gym.

Ali Ismail

Digital Artist, Lucasfilm Animation, Singapore

Music and sometimes a quick nap can do it.

Anders Lejczak

Project Manager, Framfab, Malmoe, Sweden

Doing something completely different, like going out for a beer or taking a run in the park.

André Holzmeister

A good idea or a good project

Andre Kutscherauer

3D Designer, Studio Messslinger Gmbh

Munich, Germany

The feedback from people about former works.

Anna Celarek

Student, Vienna

A long break, and thinking about something else. And chocolate of course.

Bogdan

I like to be challenged! I'm fired up when a project is almost impossible to be made in the given time, or when the difficulty of the FX is mind blowing. These things are pumping a lot of adrenaline into my veins and I take any difficult challenge as a personal one. It's like when I'm climbing the mountains. If I see the peak up there I cannot just sit and watch it from the bottom. I really have to be up there!

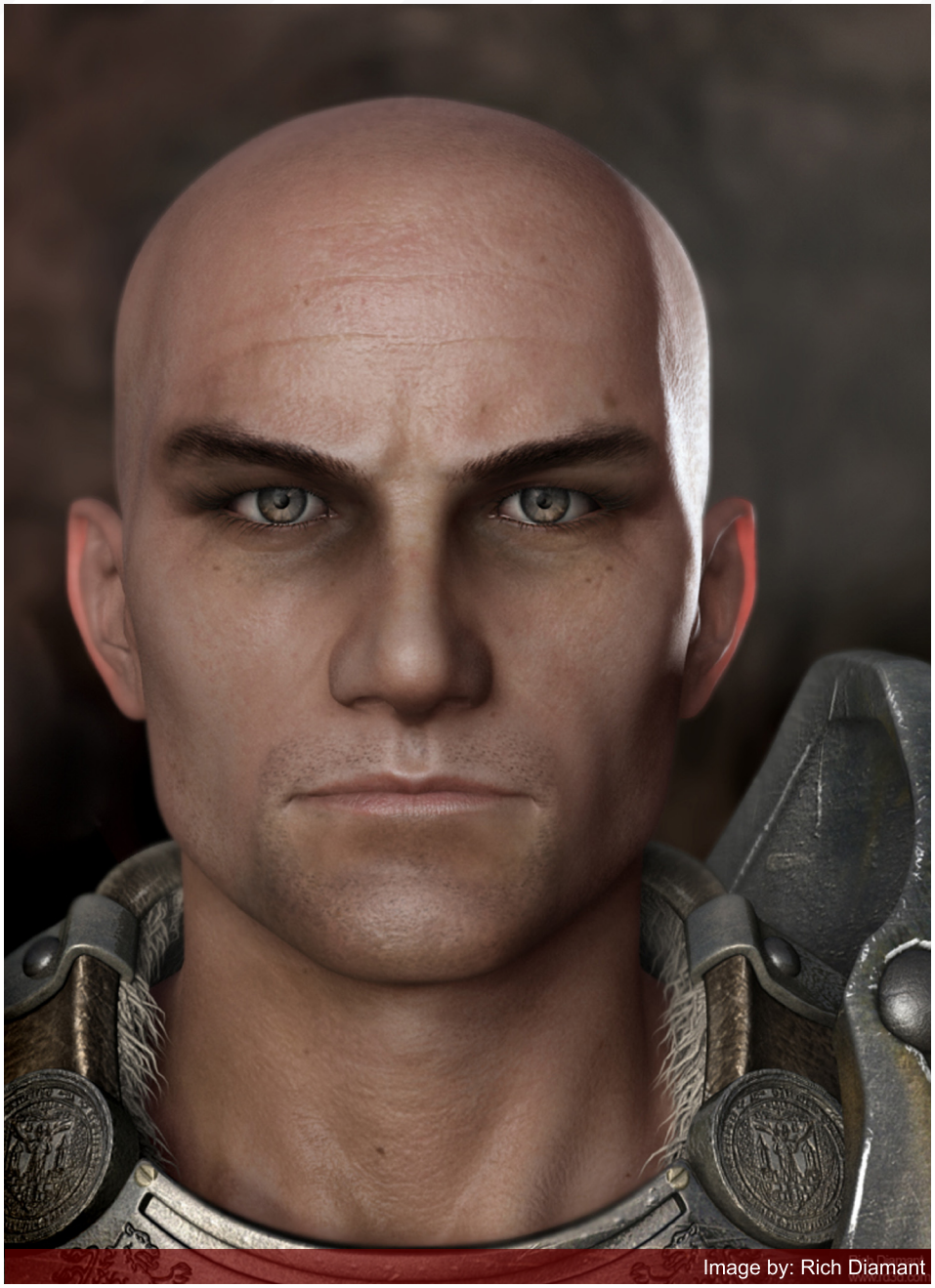


Image by: Rich Diamant

Cesar Alejandro Montero Orozco

CG Artist & Freelancer, Digi-Guys

London (UK) and Mexico

Chocolate, a cup of green tea, a smile from a girl I like, the sun, etc.

Dana Dorian

Director, Axis Animation

Glasgow, Scotland, UK

Seeing other people's work helps to motivate me. Also open competitions and deadlines tend to help me come up with new ideas.

Daniel Vijoi

The fact that I love what I do. I love my work. Sometimes I start working at old unfinished ideas and artworks to refresh my working mood.

David Revoy

Drawing, studying new techniques, building new custom brushes ...

Eric Provan

3D Modeller, Sony Pictures Imageworks

LA, USA

'Karate Kid' or 'Over the Top'. I'm kidding.

Well, kinda. A lot of things can motivate me. A good film definitely tops the list. I also have a reference folder packed with inspiring artwork that I've collected on the Internet over the past few years. It never fails to get my artistic juices flowing.

Eugenio Garcia

3D Illustrator & Animator, GrupoW

Saltillo, México

Reading a book, sleeping, viewing galleries of digital art in the web and watching tutorials.

Gustavo Groppo

General 3D Artist, Mamute Mídia

São Paulo, Brazil

I usually share the problem with other people to get some advice about it. I also like to find motivation by looking at other artists' works and observing more carefully the things and people that surround me. You can be motivated by the simplest smile from someone.

Hasraf Dulull

Visual Effects Artist, The Moving Picture Company, London, Soho

Watching loads of movies and reading material such as this great magazine (wink!)

Jure Zagoricnik

Web Developer & 3D Freelancer, Hal Interactive & 3D Grafika, Kamnik, Slovenia

Sex!

Liam Kemp

I like to simply lie down in the afternoon and drift into a very shallow sleep where I'll let thoughts and ideas interweave of their own accord, and have very little conscious control of where they're taking me. I'll often wake up refreshed and with a new perspective on the work I'm undertaking.

Mathias Koehler

Freelance 3D Artist & Industrial Design Student, Braunschweig, Germany

Browsing through other artwork.

Matt Westrup

Getting a good idea for a short film or watching something done by Pixar.

Michael Seidl

3D Artist, Modelling & Rendering, www.michaelseidl.com, Vienna, Austria

Always a good motivation for me is looking at other artists' work, or browsing different forums. That helps me to get back to my work with new fresh ideas and a well motivated attitude.

Neil MacCormack

Freelance 3D Artist, Bearfootfilms

Geneva, Switzerland

Deadlines.

Nicolas Collings

Seeing the works of the others artists. When I see something cool, I want to make something just as cool myself.

Pedro Mendez

Music and watching how nature behaves.

Pete Sussi

Looking at other people's work, including sites, reels, shows, movies... etc. Sometimes stepping away until I miss it helps - if I have the luxury of not having to work!

Peter Sanitra

3D Artist, ImagesFX, Prague, Czech Republic

Browsing some photography portfolios and relaxing outside.



Image by: Peter Sanitra

Petra Stefankova

Constructive criticism from people I respect or listening to successful stories from my more experienced colleagues. And. of course, my very good friends who always keep me motivated.

Rich Diamant

Oddly enough it's seeing an amazing piece of artwork by somebody else. It makes me want to go make something myself to almost prove that I can do it.

Sean Dunderdale

Planning work on the short film I'm involved in keeps my motivation up.

Sorin Radu

I am motivated to work when I look at other people's works, or if I'm taking part in a competition.

Stepan (O)ne Grakov

Couple of days free of work – far from my computer. After that I return with new ideas and the energy to make everything better.

Sven Rabe

Watching some comedy TV series, a good movie or just viewing other people's artwork brings me back on the track.



Image by: Nicholas Collings

Tiziano Fioriti

Freelance 3D Artist & Digital Matte Painter

Italy

I think that I have a way out. Luckily this is not only a job but also a way to run away from my daily routine. When I go through some difficult times, I let my imagination wander. I daydream. Being able to give full rein to my fantasy is a source of great comfort to me.

Tycane

3D Developer & Designer, NDG, Amsterdam

Movies or games for sure. Or just checking different sites, like 3D Total and CG Talk - they both have an extremely inspiring gallery.

Vojislav Milanovic

When I'm down (and I think we all have our moments), I usually take a few days off, spend them resting and surfing the net, looking at lots of different artworks. I always find something that inspires me.

Zdenek Urbánek

Student, Liberec City, Czech Republic

I have lot of motivation usually. When I haven't got a lot of time and little motivation, sometimes I can get it from games, or I visit CG websites and I browse the work of other artists. Good motivation comes from holidays or mountains. Big mountains and historical places serve as particularly good motivation for me.

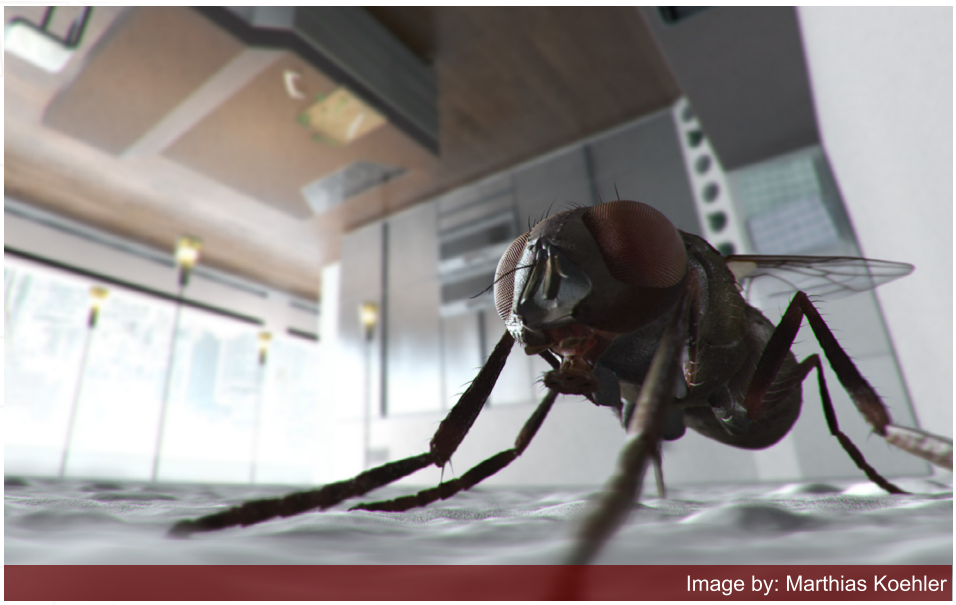
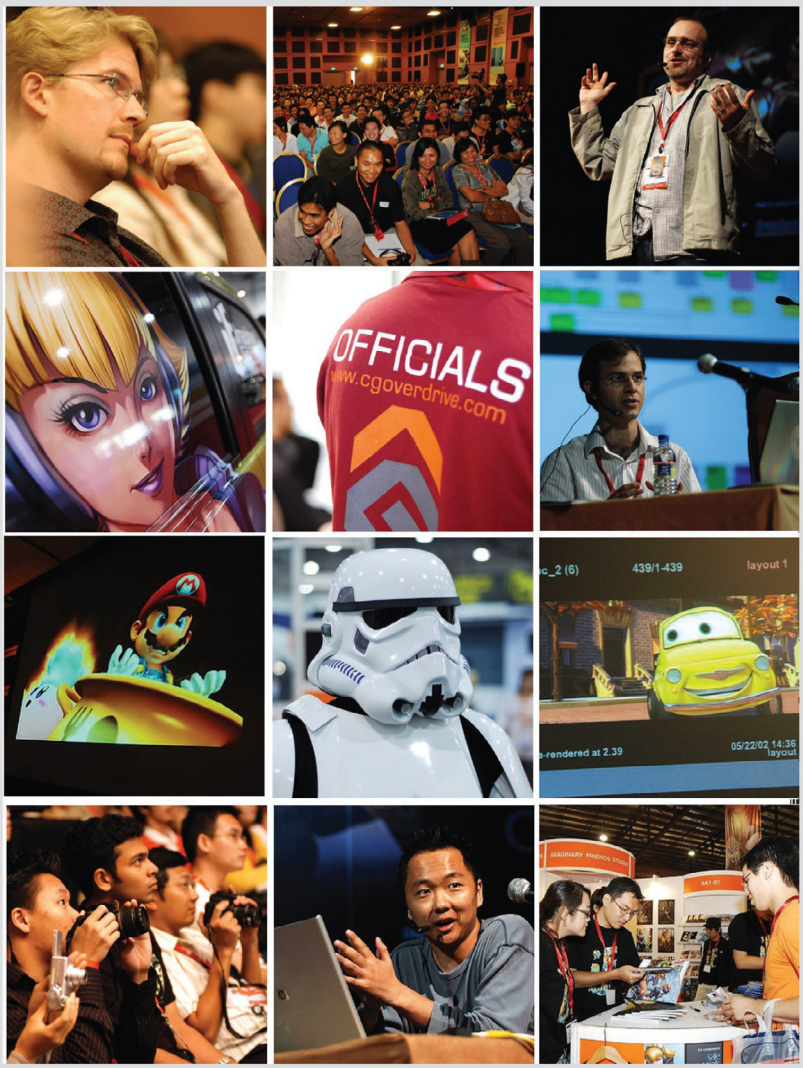


Image by: Marthias Koehler

In next month's issue, find out what a group of artists said when we asked them:

"What is an important factor when compiling a portfolio?"



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SCREAM

"'SCREAM' PRESENTS CHESTER, A CHUBBY LITTLE SQUIRREL WHO VENTURES OUT ONTO A QUIET COUNTRY ROAD IN PURSUIT OF A PRIZED ACORN"



Method collaborates with Director Kinka Usher on Bridgestone Super-Bowl Spots via the Richards Group

SCREAM

Method (**www.methodstudios.com**), the innovative Los Angeles-based visual effects and animation studio, collaborated with Director Kinka Usher on a new spot for Bridgestone via The Richards Group. Aimed at “drivers who want to get the most out of their cars,” ‘Scream’ aired during the Super Bowl on 3rd February 2008.

Designed to highlight the enhanced traction of Bridgestone tires, ‘Scream’ takes a clever look at other things on the road, presenting both real and CG animals.

“This project seamlessly unites 3D and live action,” says Method’s Andy Boyd, lead 3D artist on ‘Scream’. “It is always our philosophy to shoot as many elements in-camera as possible, just because it looks best that way. On these spots, of course, real animals couldn’t do exactly what we wanted them to, so we had to create photorealistic 3D animals that could cut directly with live action footage to give us the performance shots needed to sell the story. Delivering close-ups of the animal’s faces at HD1080 resolution was a huge challenge. There was no way to cheat; they just had to be perfect. The quantity and variety of animals meant great fun for our team of artists.”









Scream-Inducing Squirrel





'Scream' presents Chester, a chubby little squirrel who ventures out onto a quiet country road in pursuit of a prized acorn. Pausing to nibble at his prize, Chester suddenly finds himself looking at a fast-approaching automobile. Perhaps not surprisingly, he opens his mouth wide and screams, setting off an entire forest of animals. One by one, viewers witness a raccoon, an owl, a rabbit, a mouse, a tortoise, a doe, a grasshopper, three groundhogs, and the car's passenger erupt in terrified screams. For his part, the bemused driver simply turns the steering wheel, easily manoeuvering around Chester and continuing on his way.

"After we had shot the actual animals, we needed to create face replacements that would be capable of these very human screams," says Boyd. "It was challenging, but tremendous fun to do, because we were given a lot of creative freedom to make each animal look as funny as possible. Everybody in our 3D department







was given the chance to choose and work on a particular animal and bring their own sense of humor to it. This really allowed each animation to be an expression of the animator behind the shot. As a result, you have severely dilating eyes, arched eyebrows, quivering tongues, and all kinds of funny facial expressions.

"Of all the animals however the squirrel was by far the most involved. We were able to focus on the performance of the squirrel, creating the perfect animation for the 'funny' scream, but also using all the best performances of Chester on set.

"We had to make several rather large technical leaps to achieve the level of realism these spots required. Not only did we create a pipeline to allow our animators to do muscle systems and animations within Maya which we then ported as geometry to Houdini, but within Houdini we created our own proprietary fur system. This system was infinitely tuneable and allowed us to write functions to enable both greater control and greater levels of authenticity," Boyd adds. "We are already taking these tools forward to



the next version of Houdini, and are excited about the challenges these toolsets allow us to tackle."

'Scream' has been a great example of how Visual Effects helped to tell a story and at the same time stayed invisible.

Tools: Side Effects Houdini, Autodesk Maya, Autodesk Flame, 2d3 Boujou,

About Method

Based in Santa Monica, California, Method is a visual effects artists' studio specialising in the production of digital imagery for commercials, feature films and music videos.

More information may be found at: **www.methodstudios.com.**

Scream

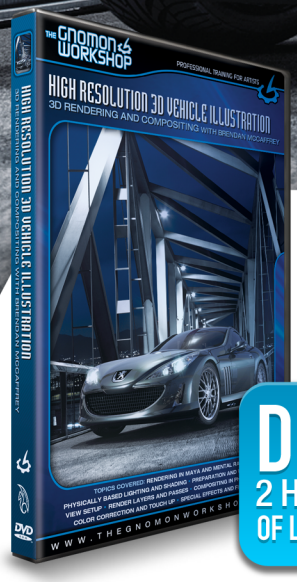
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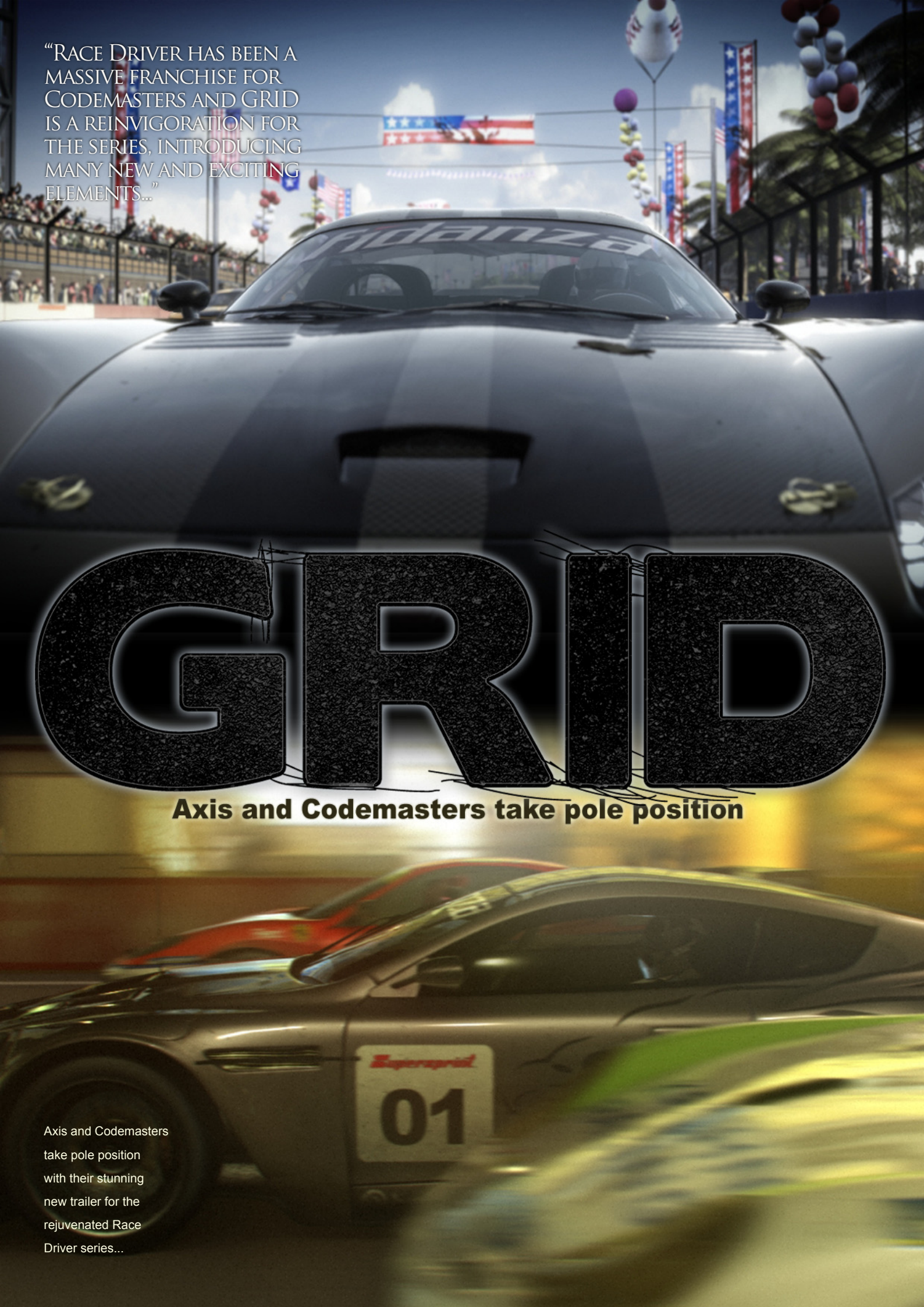
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"Race Driver has been a massive franchise for Codemasters and GRID is a reinvigoration for the series, introducing many new and exciting elements..."
GRID
Axis and Codemasters take pole position
Axis and Codemasters take pole position with their stunning new trailer for the rejuvenated Race Driver series...

Axis have followed up the success of the trailer for Colin McRae: DiRT™ with another fantastic piece of work for the next big racing title from Codemasters®, Race Driver: GRID™. The game features the ability to race all over the world and allows the player to get behind the wheel of different car types on a range of tracks, including street racing in the USA and Europe, drifting in Japan and 24 hour racing at Le Mans.

Directed by Wiek Luijken, who also directed the Colin McRae: DiRT trailer, the sequence takes the viewer on a trip around the globe explaining that, at any one point in time, somewhere someone is racing.

'Our brief was similar to that of the Colin McRae: DiRT trailer' says Luijken. 'Race Driver has been a massive franchise for Codemasters and GRID is a reinvigoration for the series, introducing many new and exciting elements, including more cars on the grid, different racing styles and extensive car damage. Our main challenge was to present these new elements in a visually arresting style that would press all the right buttons for race fans.'









The sequence starts looking down on earth from space, as the music builds we cut ever closer as the camera flies down towards the west coast of America, before breaking through the cloud and revealing the grid of a street race in San Francisco.

We follow the action as the cars peel away from the start line. As the racing sequence builds momentum the camera suddenly pulls back



up above the earth quickly closing in on Japan before crashing back through the clouds and getting in amongst a drift race taking place in Tokyo. Following a dramatic slow-motion crash with debris flying everywhere the camera is again whipped up to space and we then zoom back into Europe and follow some lightning quick night time racing from the Le Mans 24 Hour.

'The globe was a key element for Codemasters and Wiek played around with different ways in which it could be used before settling on a crashing to earth effect to clearly show the journey across the world as well as simultaneous racing in various parts of the globe' said Producer Paula Lacerda.

The zoom from such an extreme view above the earth to close up on the track was a challenge for the Axis team and Luijken worked with Lead Animator Steve Townrow to choreograph the moves very tightly so that they went smoothly into the racing action.

'The extreme zooms weren't the only challenge on the project' said Luijken. 'We also had some large environments to create and then we had to populate them with crowds.' The Axis team worked with some environment assets provided by Codemasters slotting them into their pipeline and creating some additional detail where required.

The team also created a tool in Houdini that allowed them to place crowds quickly by painting directly on to geometry and letting the tool decide which characters were placed where and which animation sequences were used.

'Crowds have always been interesting to get right' said Lacerda. 'But this new tool has really sped up the whole process for us and we look forward to using it further on future projects.'

As well as these new tools and techniques the Axis team utilised their full arsenal of pipeline techniques to create the trailer, including capturing animation from the game engine and using it as car 'motion capture', multiple matte paintings for the expansive zoom shots and





environments and scripted particle techniques for tyre smoke and crash debris.

'This is my third project with Codemasters and it's always a pleasure to work with them' said Luijken. 'The best type of clients are the ones that push us to break new ground and advance either creatively or technically. I feel all of our Codemasters projects have always allowed us to do both.'

About Axis Animation

Axis is an award winning animation studio, based in Glasgow, Scotland, dedicated to creating the best in animation and visual effects for commercials, broadcast, film and interactive entertainment. Recent credits include BAFTA winning Colin and Cumberland for the BBC, D&AD nominated Codehunters short film for MTV Asia and the Colin McRae DiRT trailer for Codemasters.

Contact:
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More information on Axis can be found at:
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About Codemasters

Codemasters is a leading developer and publisher of best-selling interactive entertainment products for a global audience on current and future gaming platforms and channels. Established in 1986, the company's dominant brands include Colin McRae Rally, TOCA Race Driver, LMA Manager, Brian Lara Cricket and Operation Flashpoint. The company is headquartered in Southam, Warwickshire UK and maintains operations in the US, Germany, France, Spain, and Benelux.

More information about the company and its products is available online at:
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GRID

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Introduction:

Michel Roger's famous 'Joan of Arc' tutorial re-written for Maya by Taylor Kingston, Cinema 4D by Giuseppe Guglielmucci & Nikki Bartucci, Lightwave by Vojislav Milanovich and Softimage by Luciano Iurino and 3DCreative Magazine.com.

If there has been one single tutorial that has educated and inspired more budding 3d artists than anything else, this complete step by step project by Michel's must be it. The community is in debt to him.

These 120 plus page, Downloadable PDF's are designed for ease of use to help beginners and intermediate level of artist alike in the creation of a female character. The tutorial takes you through the process of modelling, texturing and mapping to finally adding bones.

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Chapter 2: Modeling of the Head
- Head, Ear & Assembly

Chapter 3: Modeling of the Accessories
- The Sword & Armour Legs

Chapter 4: Modeling of the Accessories
- Armour Bust, Hair & Glove

Chapter 5: Modeling of the Accessories
- Accessories & UVW Mapping

Chapter 6: UVW Mapping
- Sword, Clothing, Armour & Body

Chapter 7: Texturing & Hair
- Eyes, Skin & Hair

Chapter 8: Bones & Skinning
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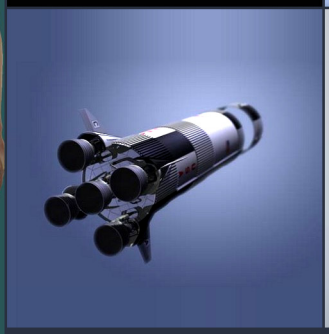
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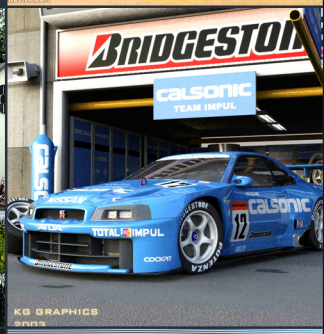



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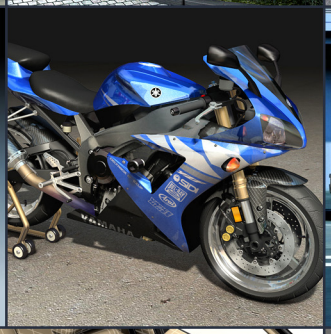
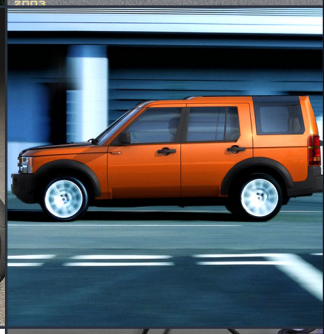
3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online

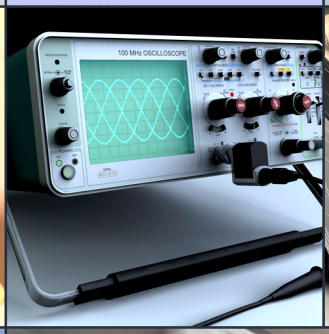




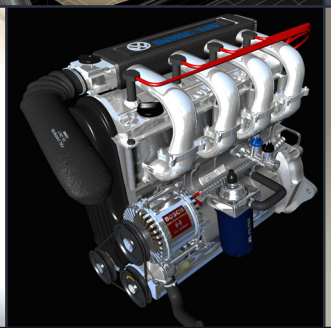










GALLERIES



This Month we Feature:

Pedro Conti

Chris Wilson

Simon Reeves

Mario Nogueira

NoX

Miroslav Hundak

Alberto Trujillo

Romain Gouzenne

Vivek Ram

Ziv Qual



ELLA

Ziv Qual
http://www.zivcg.com
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NERM, FROM THE CHRONICLES OF NERM

Chris Wilson
http://www.cwanimation.com
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LEXUS

Simon Reeves
http://www.simonreeves.com
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THROUGH THE GREEN HELL

NoX
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WOOD/CONCRETE WC

Mario Nogueira
http://rip3d.net
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THE SAGE'S REFUGE

Alberto Trujillo
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The Wonder Years

Pedro Conti

http://contipedro.blogspot.com

pedro_conti@hotmail.com





WALTHER P99

Romain Gouzenne
romain.gouzenne@neuf.fr

ENKIL RS

Miroslav Hundak



War God

Vivek Ram

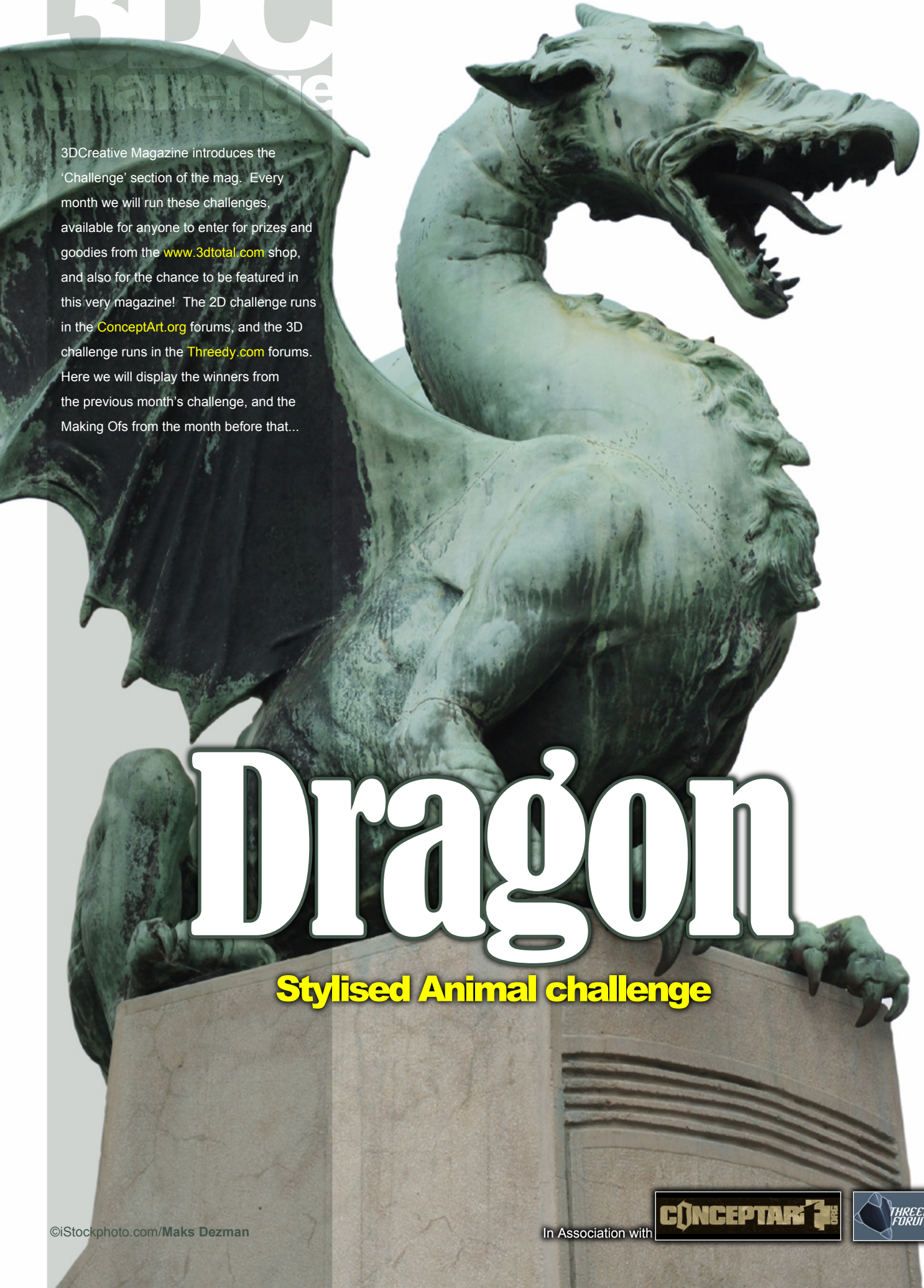
http://markeviv.blogspot.com

markeviv@gmail.com



the 3DC Challenge

3DCreative Magazine introduces the 'Challenge' section of the mag. Every month we will run these challenges, available for anyone to enter for prizes and goodies from the www.3dtotal.com shop, and also for the chance to be featured in this very magazine! The 2D challenge runs in the ConceptArt.org forums, and the 3D challenge runs in the Threedy.com forums. Here we will display the winners from the previous month's challenge, and the Making Ofs from the month before that...



Dragon

Stylised Animal challenge

©iStockphoto.com/Maks Dezman

In Association with CONCEPTART.ORG THREEDY FORUMS

Stylised Animal Challenge

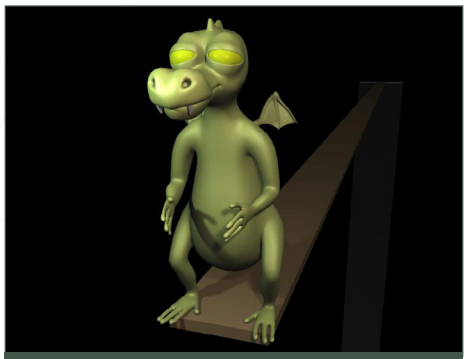
Dragon

The Challenge

Welcome to the Stylised Animal Monthly Challenge. Each month we will select an animal and post some images in the forum thread as references. All you have to do is to create a 3D image of this creature in a stylised/ abstract/cartoon style, whilst keeping your creature instantly recognisable. We wanted to publish some content in 3DCreative Magazine on how to create stylised animals, such as you see in the many feature films and cartoon galleries. We thought this regular competition might bring in just the images and Making Ofs that we need, whilst giving away great prizes and exposure. If it's successful, we will try to boost the prizes up as much as possible! This month's animal was the Dragon; here you can see the top 9 entries, as voted for by the public.



9TH MAPE



9TH TOOLZ



8TH PENGUINS
Lukemetz@gmavt.net

What are we looking for?

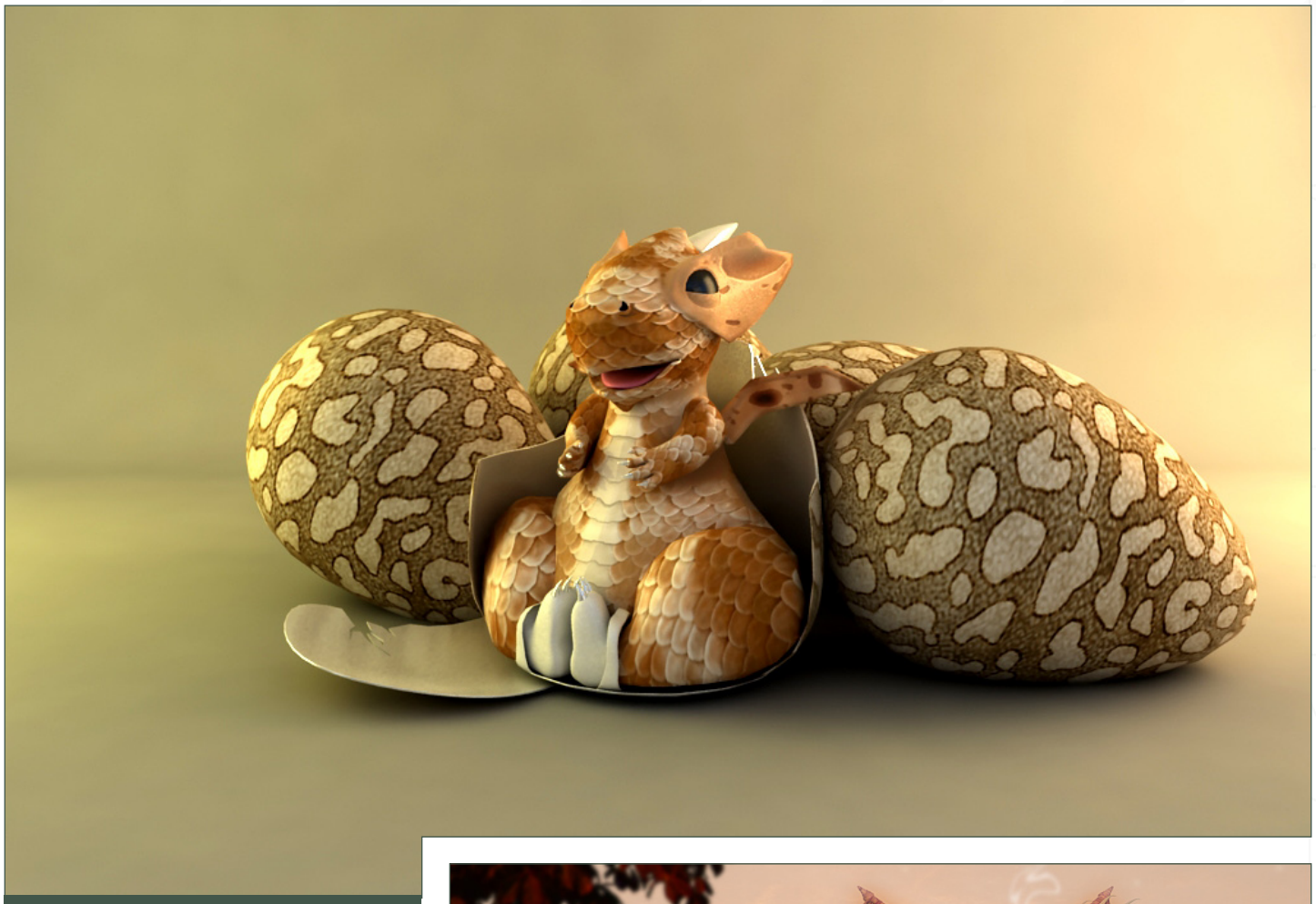
Funny and humorous entries that break the animal down into its most recognisable components. Emphasise these in whichever ways you wish and render your stylised/abstract/ cartoon masterpiece. The rules are pretty laid back: please submit 1 x 3D render (minor post work is okay). It's up to you if you want to have a background or if you want include some graphical elements or text on your image. Renders of the 800 pixel dimension sound about right, but the winners will be featured in 3DCreative Magazine, so if you can create some higher resolution images too, all the better!



8TH EVOLUTION
stephenpersona@gmail.com



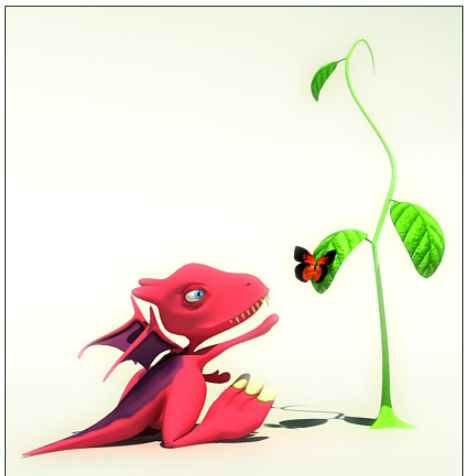
7TH STIDEROTTE



6TH AL3X



4TH CMARCUS



5TH MIES



3RD SIEGE http://www.lumaxart.com

There will be one competition per month, with the deadline being the end of the month (GMT). For a valid entry, just make sure your final image is posted in the main competition thread before the deadline. We require the top three winners to submit 'Making Of' overview articles that will be shown on either 3DTotal.com or in 3DCreative Magazine. These need to show the stages of your creation, different elements, and some brief explanation text of why, and how, you did what you did. We will format this into some nice-looking pages to give you some great exposure, and us some quality content.

Each competition will have one main thread, which starts with the brief at the top. All entrants should post all WIPs, give feedback, and generally laugh at the crazy ideas that are emerging each month!



2ND NOVISKI



1ST SILVATICUS deathcultlodge@yahoo.com

CHALLENGE THREAD

The entire DRAGON competition can be viewed here.

The current challenge at the voting stage is: 'BULL IN A CHINA SHOP'.

The current challenge taking place is: 'THE EXECUTIONER!'

To join the next challenge, or to view previous and/or current entries, please visit: www.threedy.com

Or, for the 2D challenge, please visit: www.conceptart.org
Or contact: lynette@zoopublishing.com



3RD BIGMIKEY

http://www.mike-bohman.com



2ND ENTROID



1ST - MIGSTA

mlmikey@sbcglobal.net

2D Challenge

Here are last month's top entries from the 2D side of the Challenge...



Making Ofs

Here are the Making Ofs from last month's top three winning entries...

3rd: DaddyDoom

Not being an advanced modeller, my motto has always been "keep it simple and effective". Every time I enter these challenges, I know that there are people going for it that are way better at modelling and texturing than I'll ever be, so I stick to my prime directive and try to create something that's simple, but at the same time original and funny.

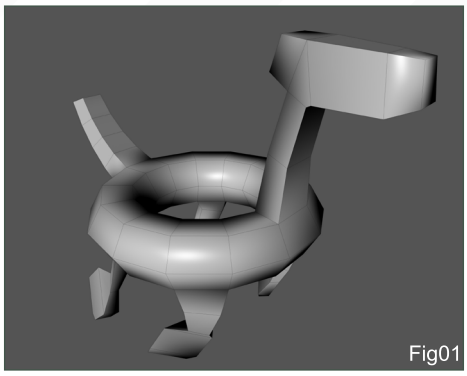
Once more, I've skipped the concept part because I had the whole scene plotted in my head, and since the model was quite linear there was no need to spend time sketching.

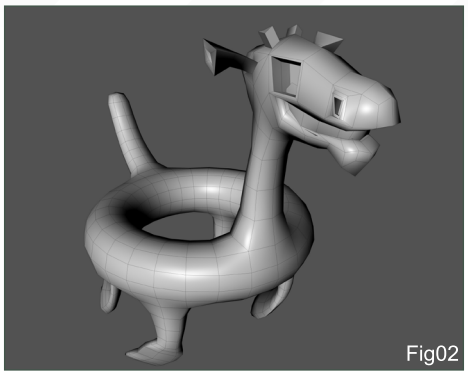
Modelling the Character

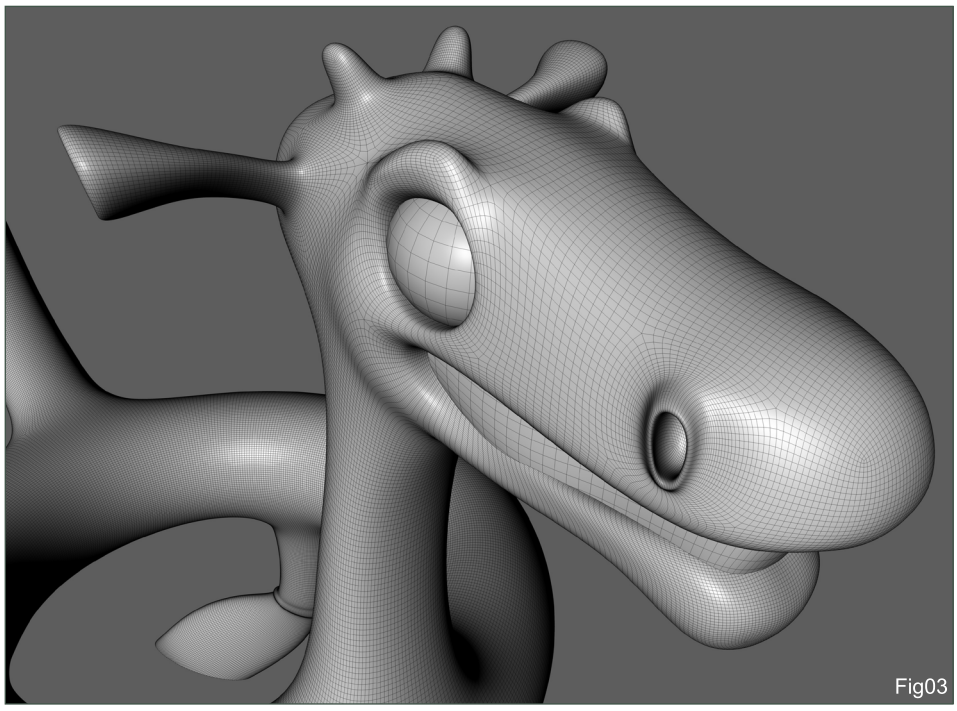
Using Cinema 4D as my 3D tool, I started modelling from a primitive torus, reducing the ring segments from 24 to 18 and the pipe segments from 18 to 6. This way, I had bigger poly faces to start extruding, and I kept the primary mesh simple (**Fig01**).

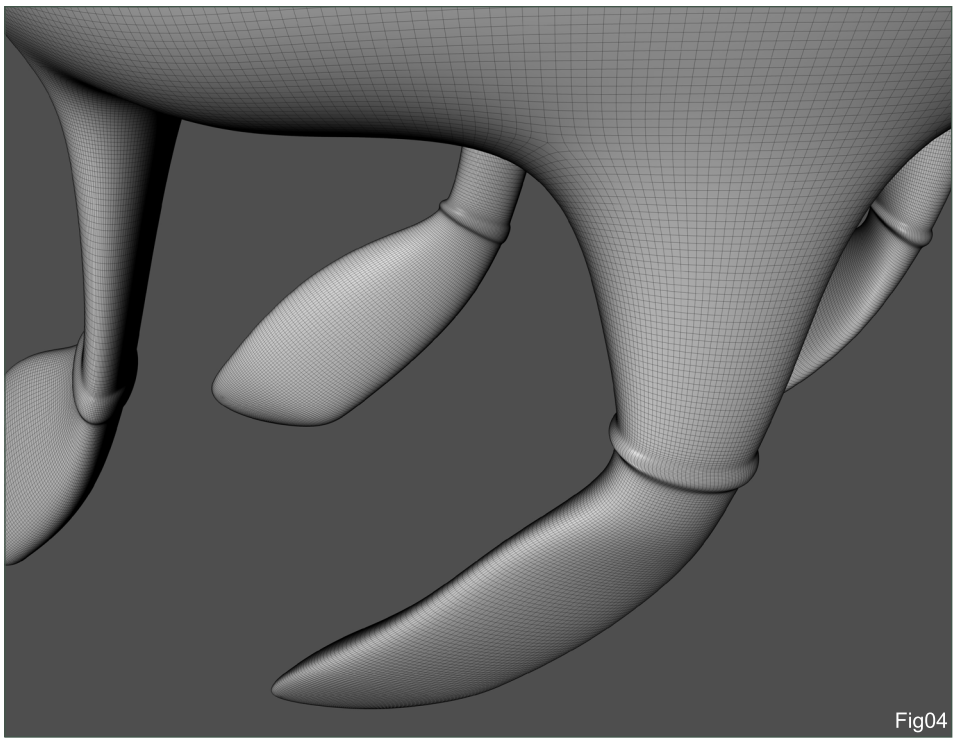
As you can see, six main areas were first extruded to define the basic shape of the character.

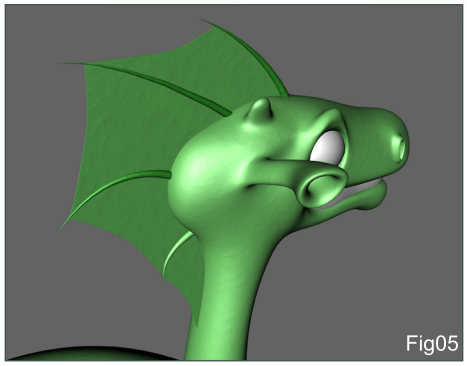
For the next step, I hypernurbed the mesh, using a level one subdivision to get the box shape smoothed and therefore gaining new polygon faces to work with. From here, new elements were modelled, like the eye sockets, nostrils, ears, mouth and horns (**Fig02**).


Fig01


Fig02


Fig03

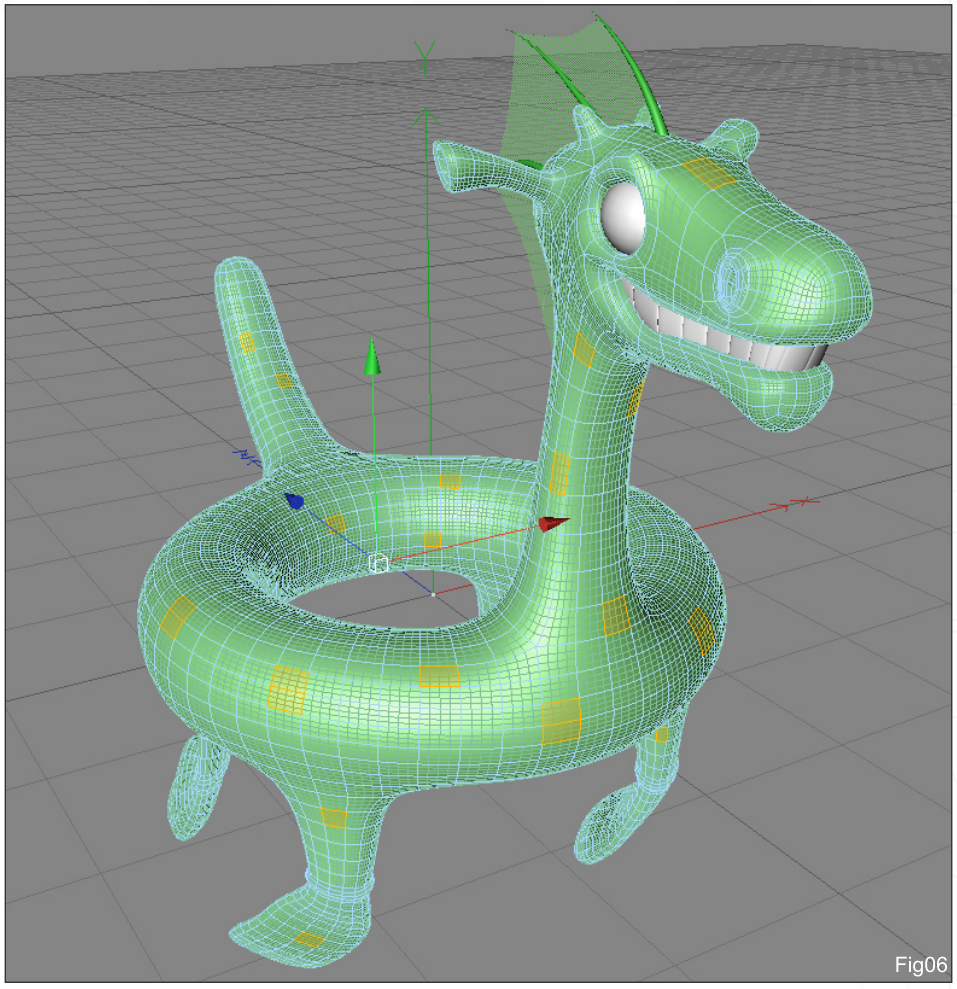

Fig04


Fig05

I then subdivided the model once more, with another level one hypernurbs, to begin modelling the first details of the character.

Next, I tweaked the head to get more expressive brows over the eye sockets, and I made some adjustments to the nostrils, mouth and chin. I also added a simple bump loop around the knees. For the eyes I used a sphere and then placed it in a Symmetry Object (**Fig03** and **Fig04**).

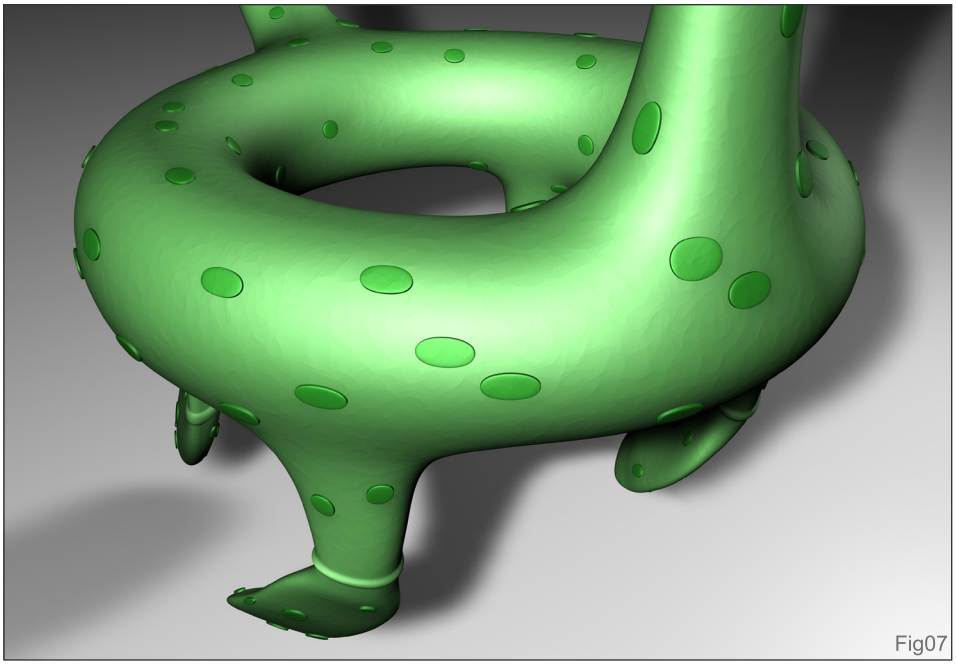
Having completed the overall mesh, it was time to work out the head crest so common to reptiles. Again, simplicity is the weapon of choice. I used the Bezier Spline Tool to create five splines, one for the crest shape and four for the spikes. The crest shape was then extruded, and for the spikes I used the Sweep Tool (**Fig05**).


Fig06

Texturing the Character

At this stage, I think it's important to start defining the basic colour set for the model, so, since the final texturing would be really linear, I decided to get the major materials for the skin.

The final step was to get the skin markings, or scales. My initial idea for this dinosaur was that he would have this sort of rubbery skin, just like a beach buoy, but still retain some organic elements. For the spots, I duplicated the body mesh, randomly selected some polys (**Fig06**), inverted the selection and deleted the rest of the mesh, which left me with the previously selected polys. From here, I re-selected them all again and applied the Extrude Tool to get some volume... and voilá, instant skin spots! (**Fig07**)


Fig07

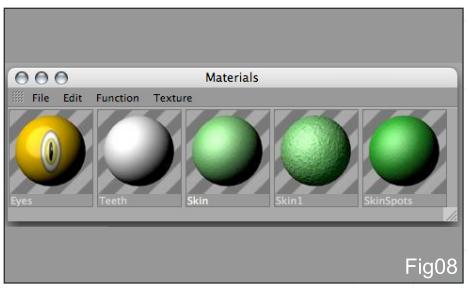


Fig08

Before the texturing, there was a tiny update made to the modelling of the teeth, to define the space in-between the teeth.

Now for the final shading... As I said, I decided to keep it simple, so all the textures also kept to this principle. The shaders for the skin and the spots were basically the same. The difference, as you can see, resides in the tone of green (lighter for the skin, darker for the spots). A soft bump map, using a built-in Cranal Noise from Cinema 4D, gave it a slightly organic feel. Finally, I tweaked the Specular settings a little. For the head crest object, I used the same settings from the skin, but with a higher bump map.

For the eyes, I created a simple image in Photoshop and then applied a high specularity level to give it a more cartoony feel. The same specular settings were used for the teeth (**Fig08**).

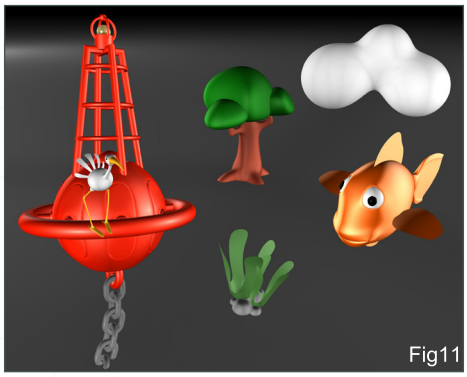
So, here's the final character (**Fig09**).

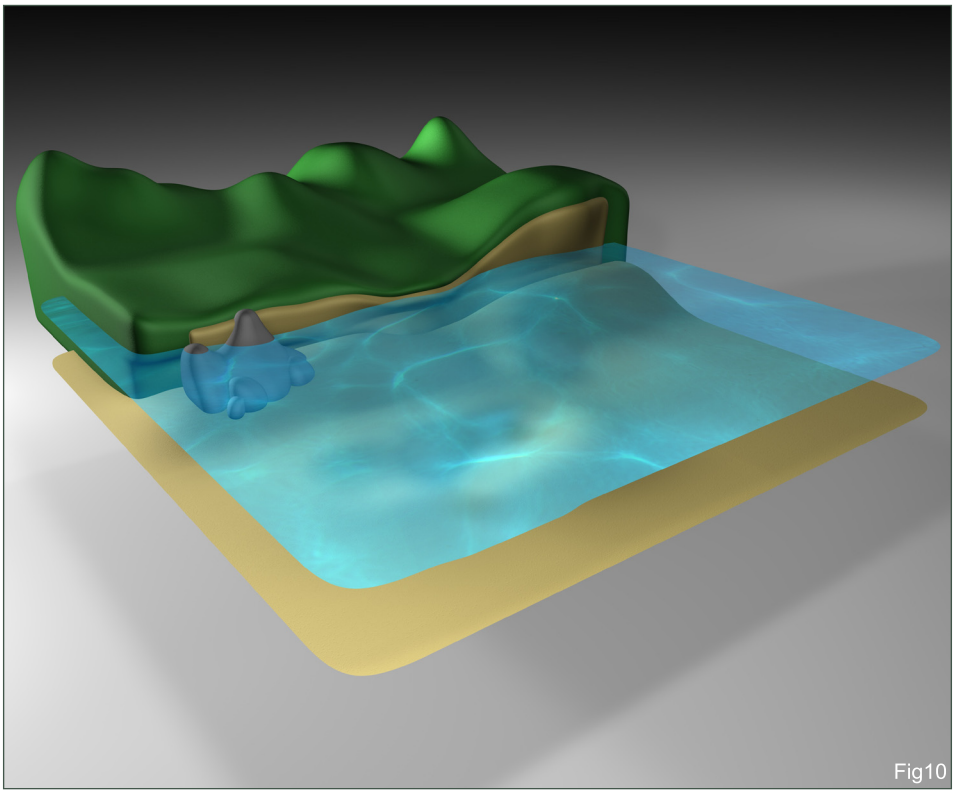

Fig09

Setting up and Rendering the Scene

I always try to contextualise my characters in a scene that can really bring their personality to life and reinforce the humorous content. I'll try to summarise this part of the Making Of the most, because the main point of interest is the character and not the scene.

To define the environment where the scene would fit, I used several Plain objects to create the ground, the sea bed and the water.


Fig11


Fig10

The process mainly consisted of extruding and moving the poly faces to create soft and wavy objects. Finally, I rooted these pieces inside Hypernurbs to smooth them out. I used simple shaders from the C4D library, with minor tweaks on the Bump and Specular settings. For the sea, I used a reference photo of a pool water, with a high index of transparency and a tiny amount of refraction and reflection. Simple! (**Fig10**)

Next, I tweaked a few simple props to spice up the scene. The red sea buoy was the scene's "supporting actor", so, from the various props created, this was the most "complex". The trees, the fish, the algae and the clouds were duplicated, rotated and replaced as needed to fill up the scene (**Fig11**). The background was a simple plain object with a gradient texture applied. The lighting setup consisted of four light sources, using soft shadows and different intensity levels. The sky object, though it's not seen, features an HDRI map for the soft reflections.

For the final render, I used Cinema 4D's Global Illumination tool, with the default settings applied. Afterwards, the rendered image went through some post-production steps in Photoshop. For the underwater part of the picture, I used a reference photo of water bubbles and another of fume effects. All blended together with layer effects and some colour correction, and thus, the final Buoyosaurus lives! (**Final Image**)

I hope you've found this Making Of useful. I know that my technique is far from being complex, but I think that, unless you are aiming for complexity, things can be kept simple. Use a very fluid workflow, and overall, keep in mind that this is supposed to be fun learning and healthy competition! See ya next time!

Pedro Daniel

For more work by this artist contact them at:
pedroldaniel@gmail.com



2nd: Jizrik

Introduction

Hello there, my name is Jirka Siska, I'm from the Czech Republic and I go by the name of "Jizrik" on the Internet. When writing this Making Of, I tried to focus on beginner graphic designers and so I've tried to explain features you might not be familiar with. However, I hope that those of you who are more experienced will also find something interesting here.

Research

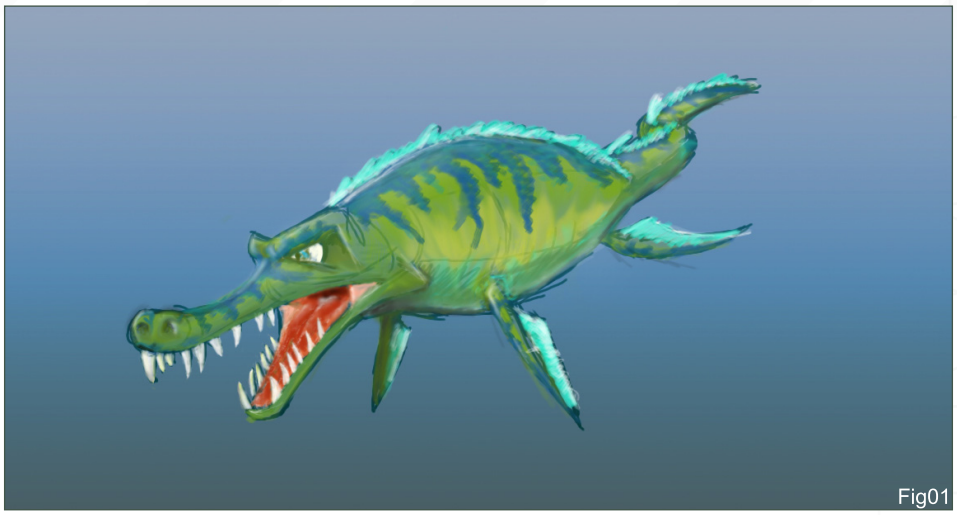
This artwork was created for the Stylised Animal Challenge contest, with the topic being "Swimming Dinosaur". The dino was modelled in Autodesk 3ds Max 8 and textured in Photoshop, where I also did some post production.

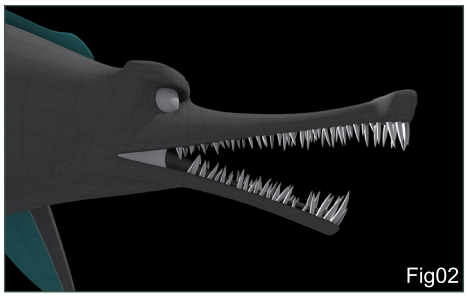
Concept

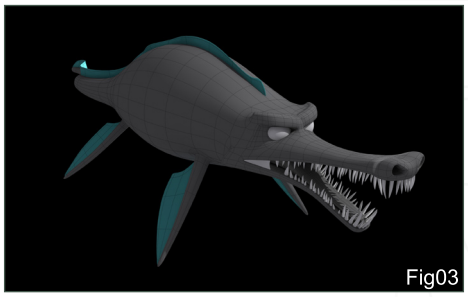
The first idea came from a drawing of my brother, which I took and developed. The most useful source of information when modelling the dino proved to be "Velka kniha o praveku" (The Big Book of Prehistory) and "Cesta do praveku" (The Journey to Prehistory). Both are illustrated by Zdenek Burian, who used to be my favourite painter in my childhood (**Fig01**).

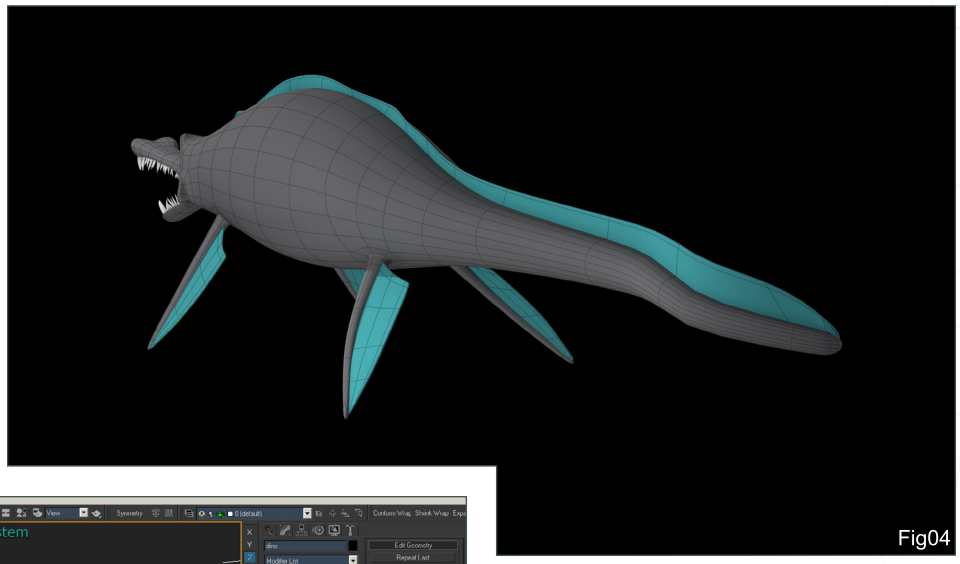
Modelling

Since I didn't do any sketches from other angles, the modelling was a bit complicated.


Fig01


Fig02


Fig03


Fig04

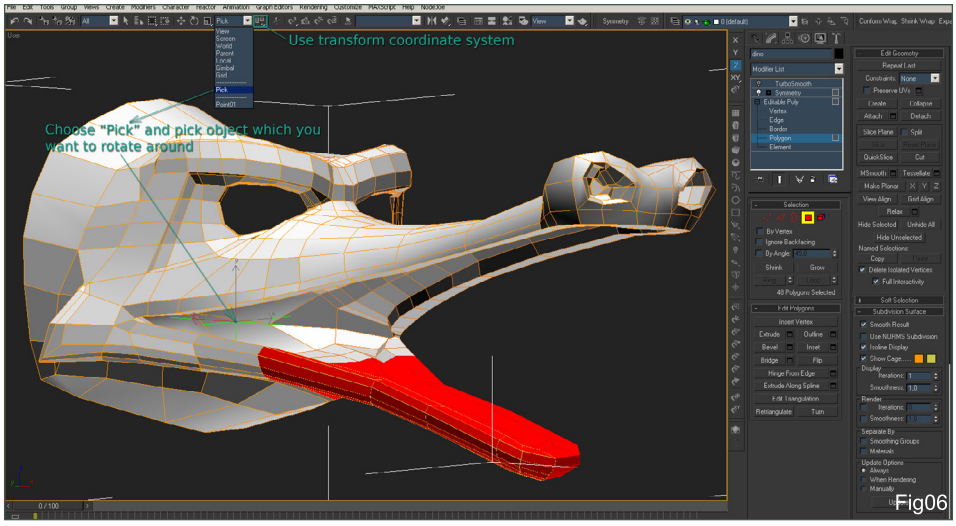


Fig06

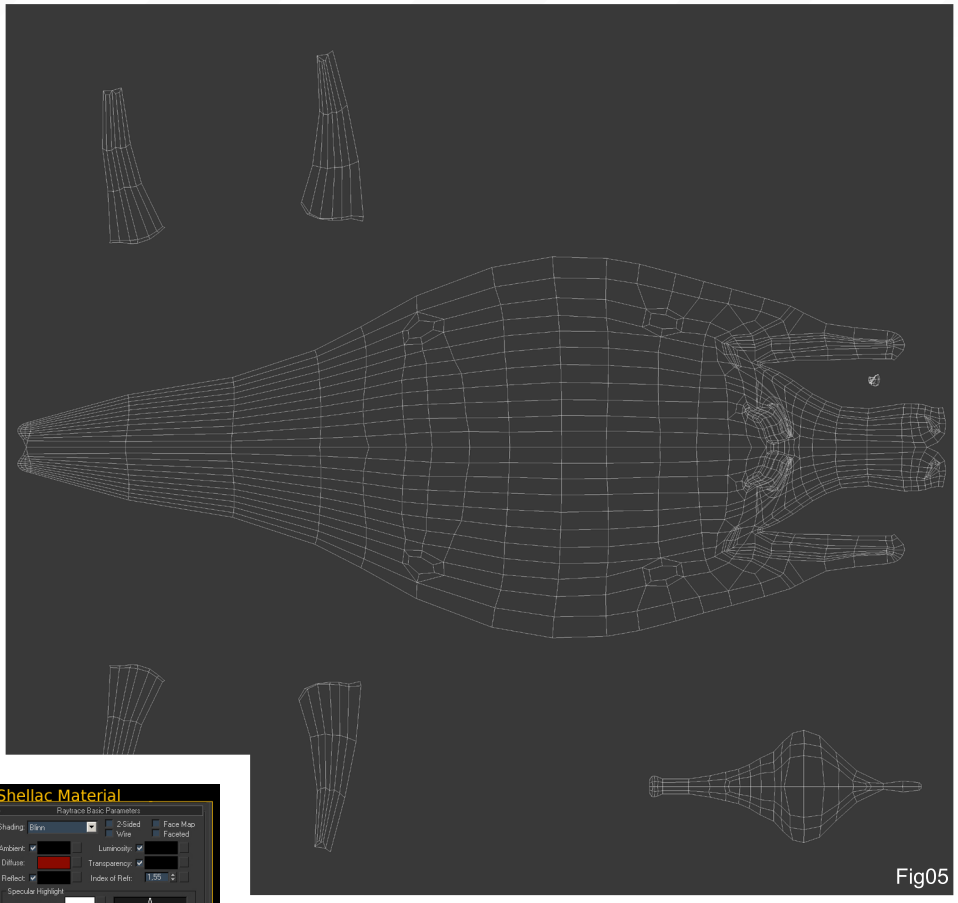
The head was done in the normal face-to-face modelling way; the body was a cylinder with an FDD modifier applied (**Fig02, Fig03** and **Fig04**).

Here I'd like to mention some interesting tips and tricks which I use, rather than describing the work with vertexes in detail. I hope some of you will find it useful.

When modelling the character I always begin with the area of eyes, because it usually defines

the personality. I use the Screen mode in the coordinate system with the hidden transform gizmo (press X on keyboard to hide/unhide it). This way the modelling is much more intuitive and faster, for me. I also find the Isolated Selection useful, which you can start up by pressing Alt + Q during active selection, and it will hide all unselected objects. If you need to rotate, for example with the sub-selection around the edge, draw a line, tape or a point with vertex snap on the edge and use this object for the reference coordinate system (**Fig05**).

I model in orthographic views instead of in perspective, because perspective tends to be a bit clumsy sometimes.


Fig05

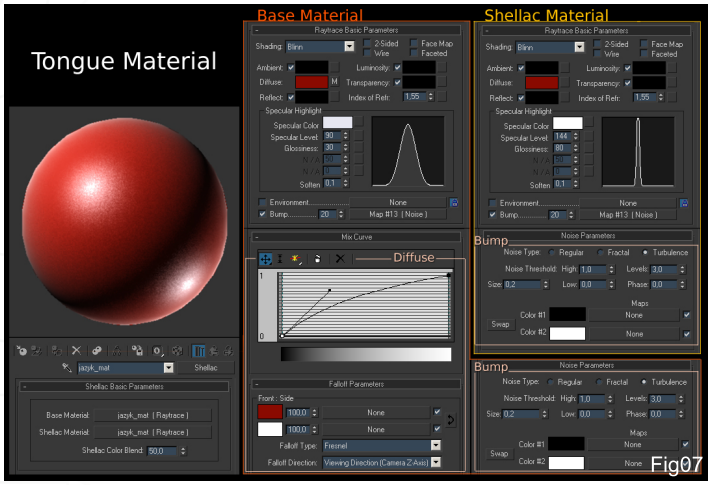
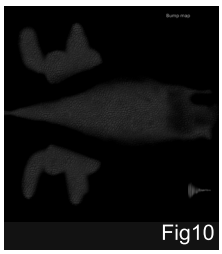
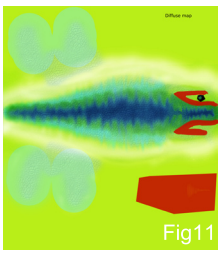


Fig07


Fig09


Fig10


Fig11

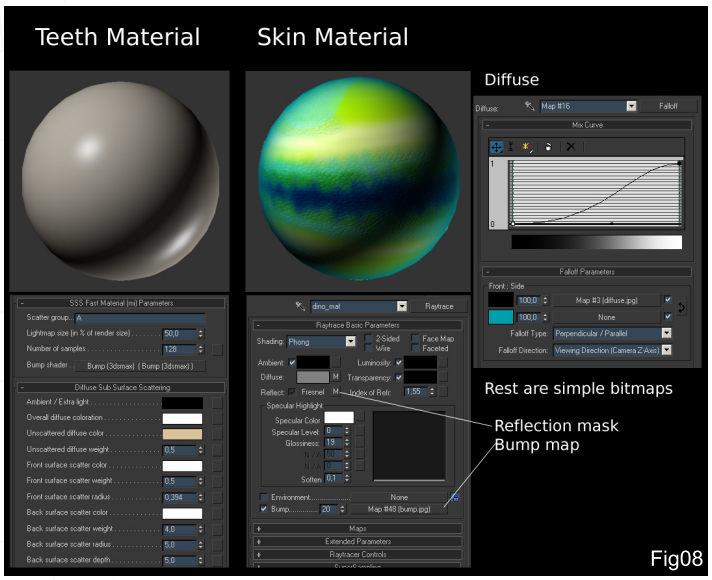


Fig08

Texturing & Materials

I used Planar UVW mapping projected from the top of the model, and the Relax dialogue in Unwrap (**Fig06**).

Here are a few examples of the materials that I used. To achieve the rim light effect I didn't use a real rim light, but rather a material fall-off in the diffuse slot, and I modified the curve (**Fig07** and **Fig08**),

This is how my textures look in reflection, bump and diffuse maps (**Fig09**, **Fig10** and **Fig11**).

Simple Rigging

For posing, I made a simple rig for the head and the jaw controls. For the rest, the FDD modifier was sufficient (**Fig12** and **Fig13**). And this is how a posed mesh looks, without any textures (**Fig14** and **Fig15**).

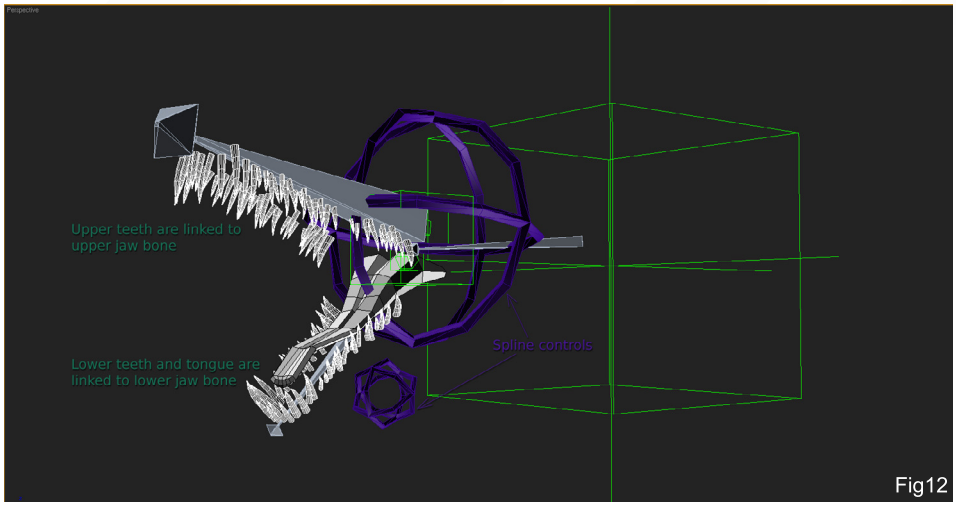


Fig12

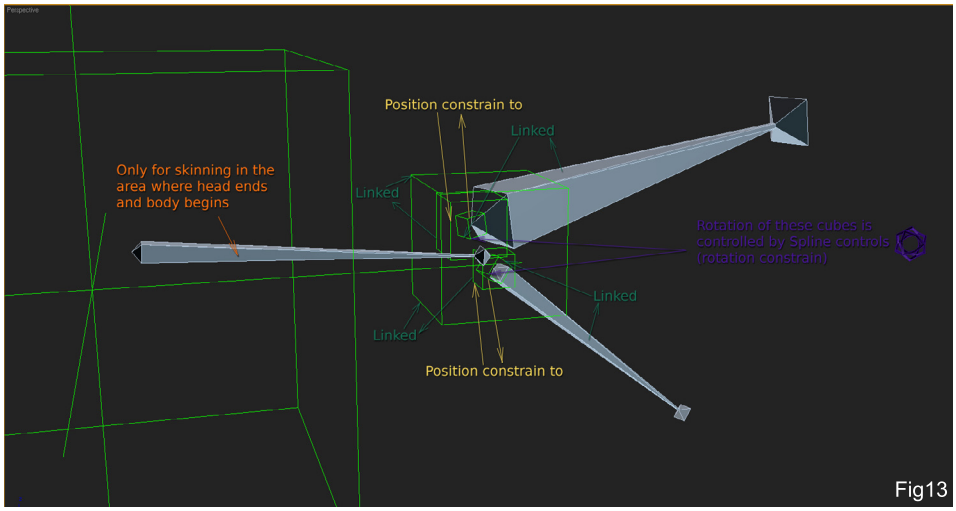
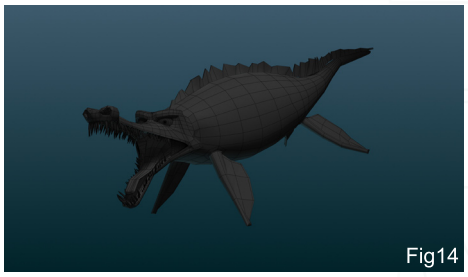


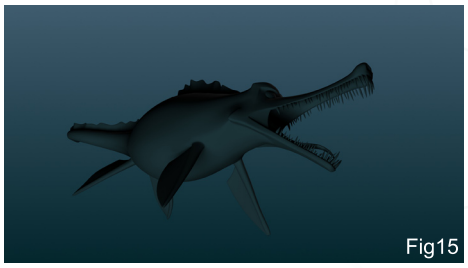
Fig13

Lighting & Rendering

My lighting rig is a common three-point lighting and a white plane with self-illumination above the scene for reflection (**Fig16**).

I'm sometimes a bit unsure about the view angle – if it is the best, etc. – so that's why I use the animated camera. I animate the movement of the camera so it covers all the angles which I think could be interesting, then I render the final animation into separate images and from those I choose the best (**Fig17**).


Fig14


Fig15

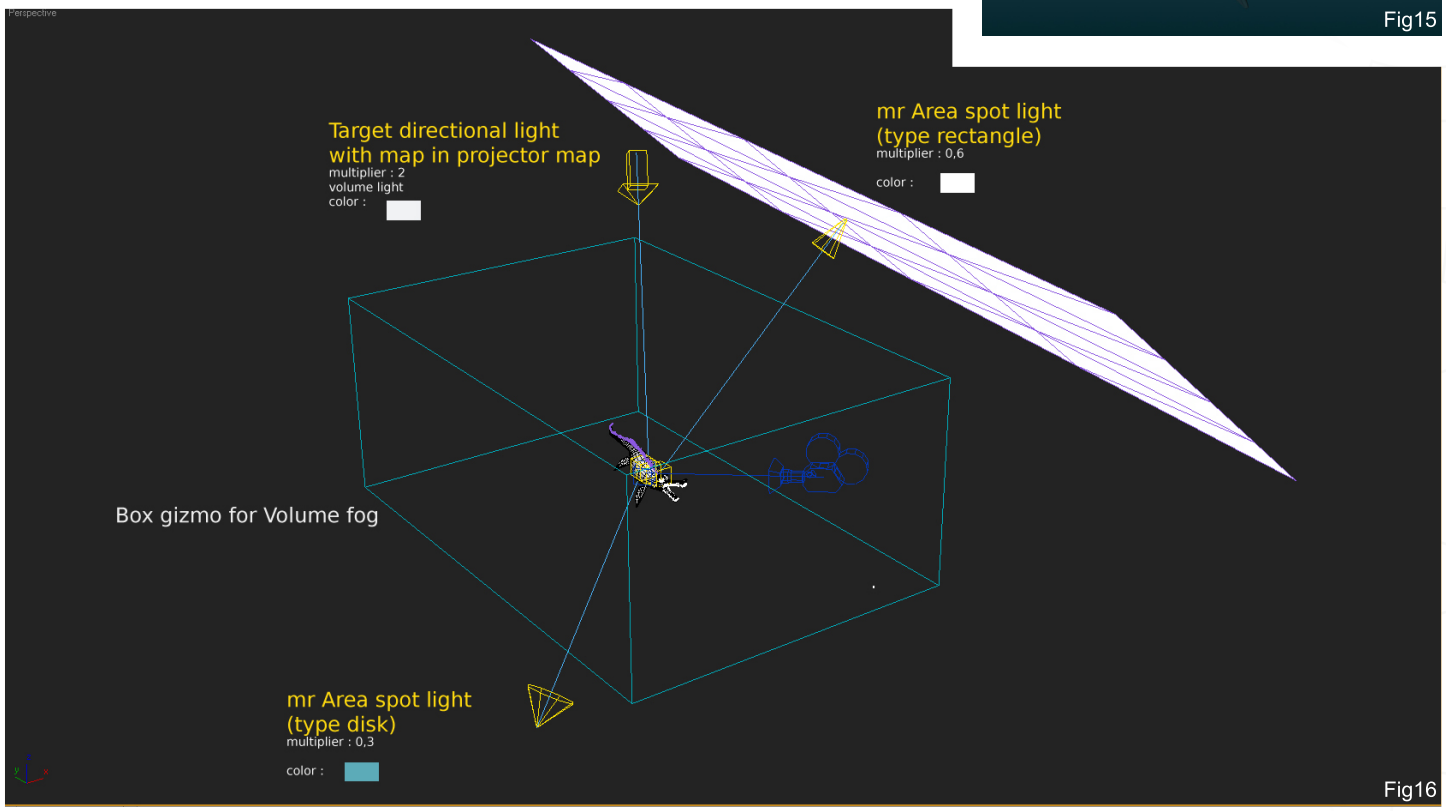


Fig16

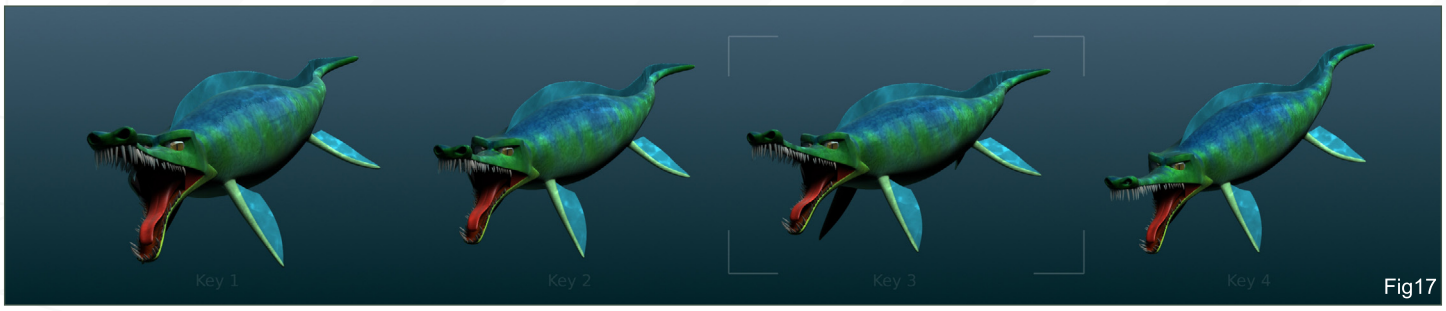


Fig17

Post Production

I decided not to do much of the post production on the final picture, so I did a beauty render and volumetric lighting separately, and played with some colour adjustments (**Fig18**).

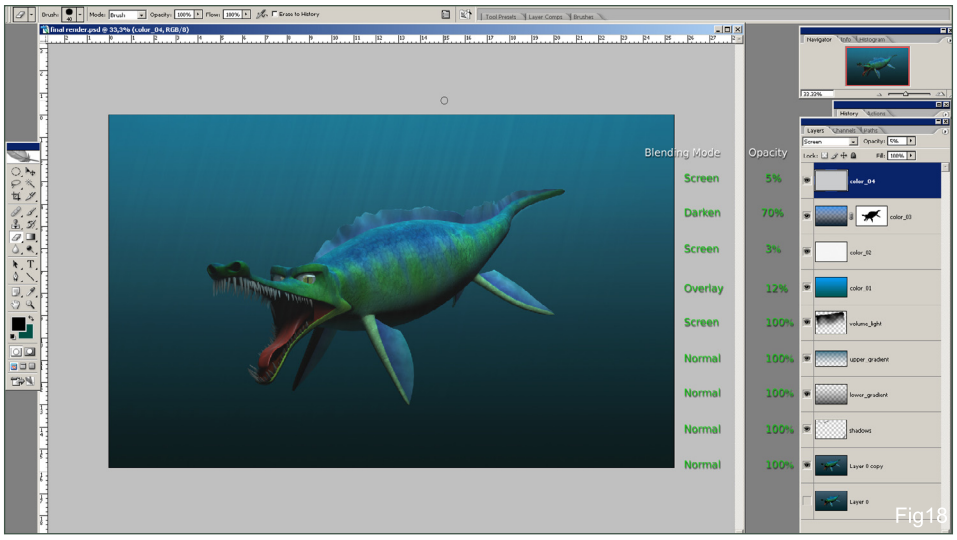


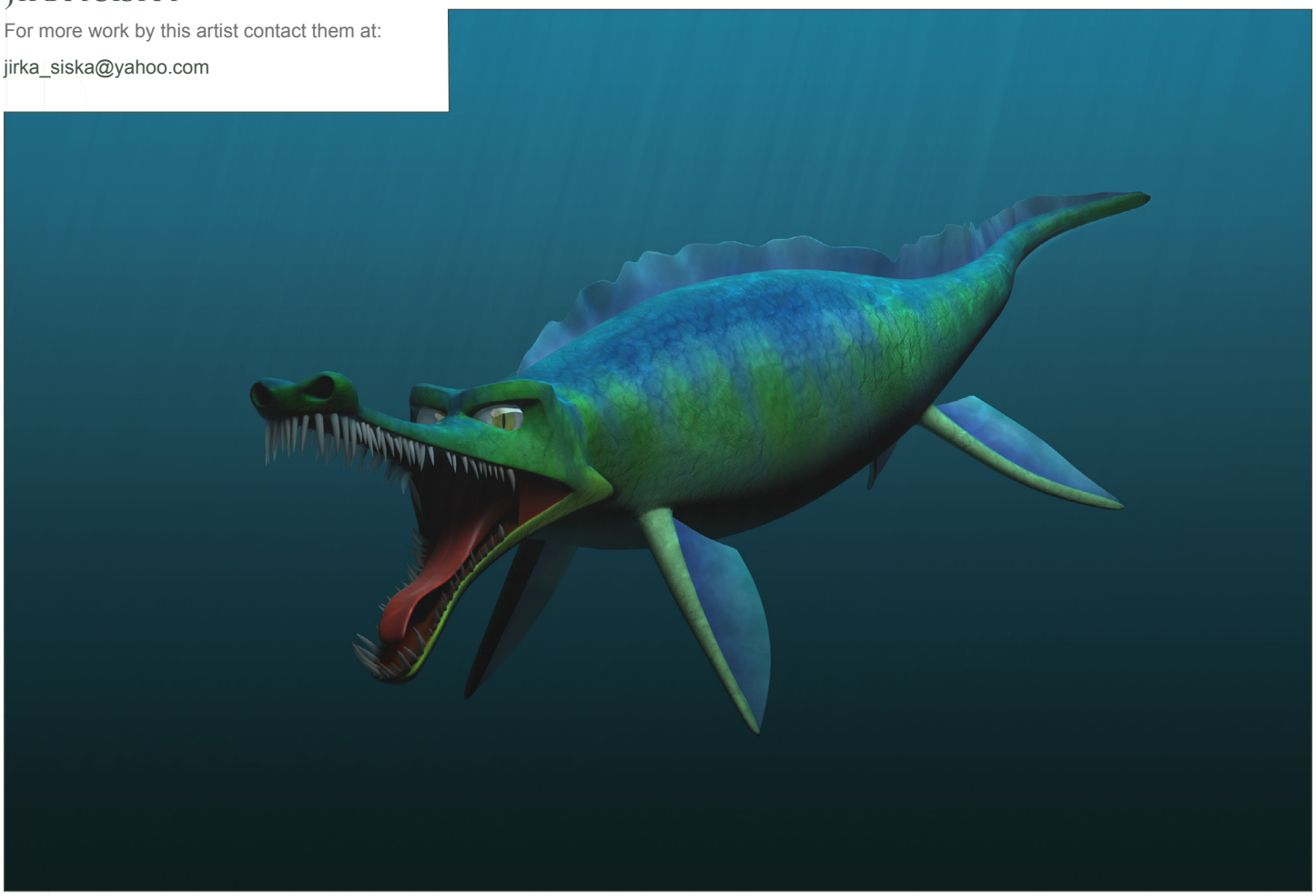
Fig18

Final Render

Thank you for reading my Making Of and I hope you have found it useful. Also, thanks to my friend who helped me out with the translation. Should you have any questions or comments feel free to contact me below. Have fun!

Jirka Šiška

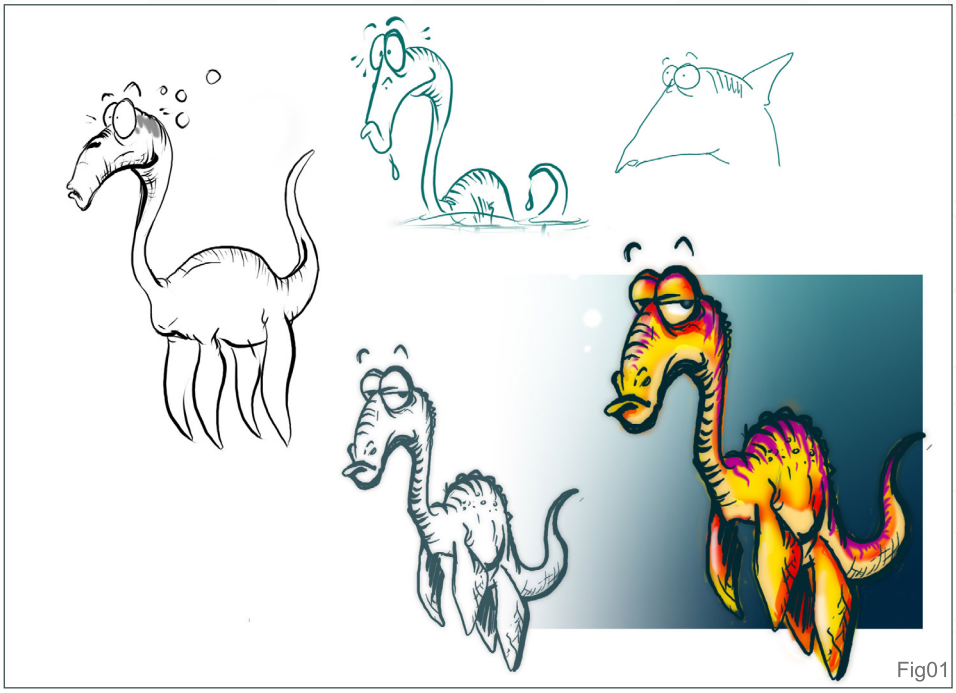
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1st: Stroggtank

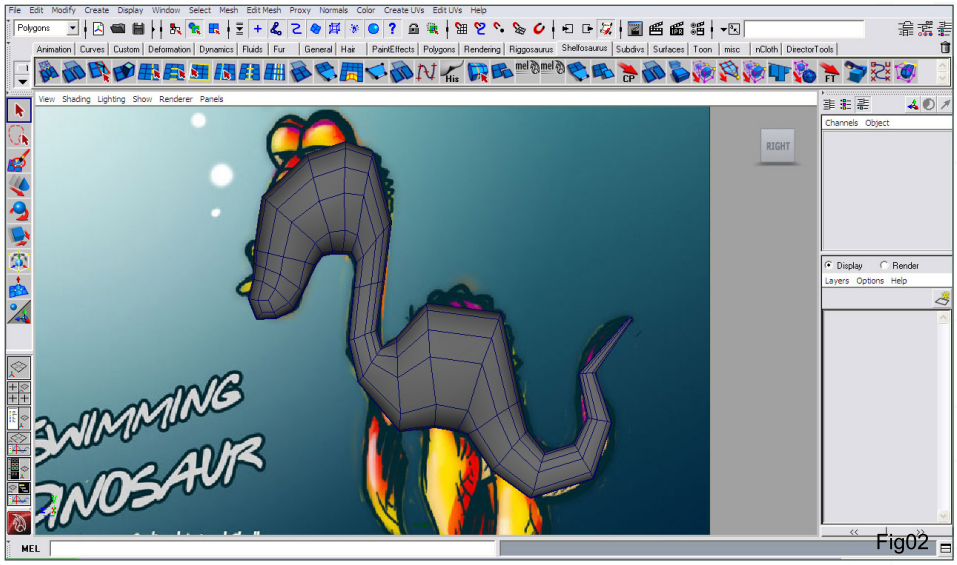
Concept

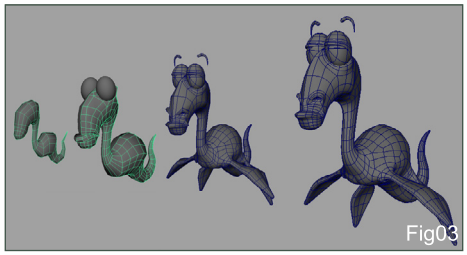
I've been a big dinosaur fan since I was a kid, so when I saw the theme for the December competition, I didn't think twice about entering my sketch. The final concept is not too different from the original ideas that I had for the sketch. I decided to change the character proportions and play around with the contrast between appearance and mood, and so I ended up with a cute and colourful Plesiosaur with a grumpy and annoyed expressive mood (**Fig01**).

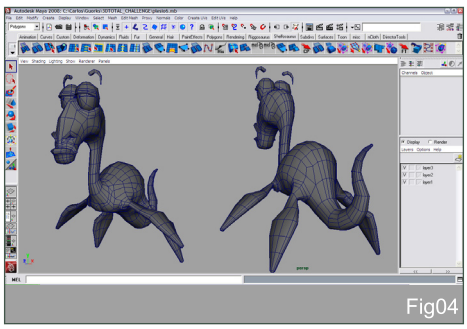

Fig01

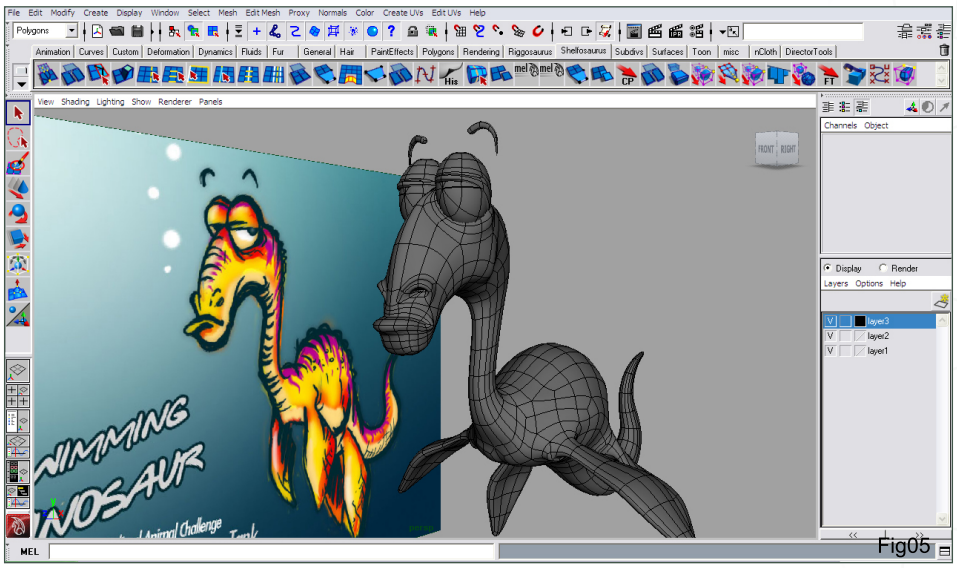
Modelling

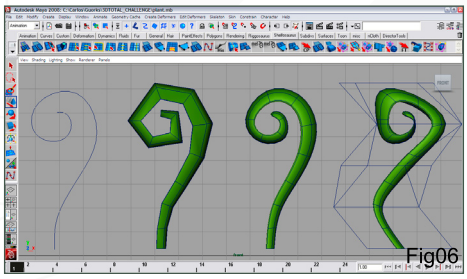
I imported the sketch as an image plane into Maya, so that I would have a reference for proportions and the final pose (**Fig02**). The modelling method I always use is a common one: I begin with a 6 x 2 cylinder and start extruding faces and edges to make a rough shape, then I start tweaking vertices, cutting faces and adding edgeloops (**Fig03**). Because this was going to be just a still image, I modelled some parts of the body (like the neck, tail and facial expression) in the final render pose and just left the fins in the bind pose. Once I finished the basic modelling I cleaned the topology a little to define some subtle muscles in the body, like the chest and the intersection of the fins with the body (**Fig04** and **Fig05**). To prevent

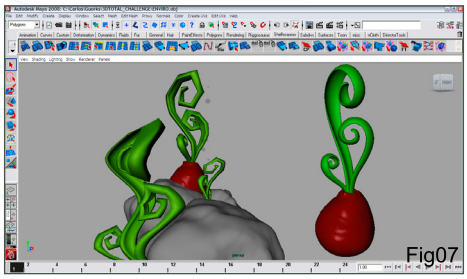

Fig02

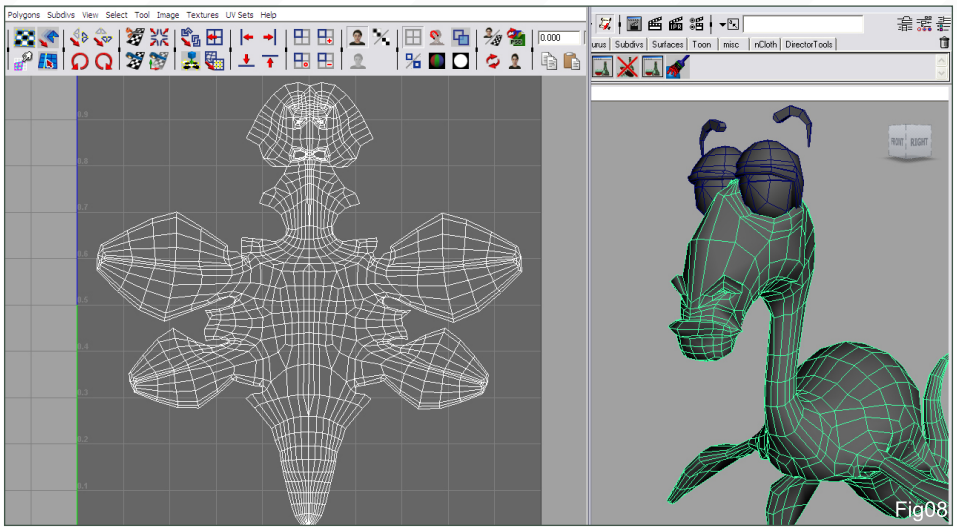

Fig03


Fig04


Fig05


Fig06

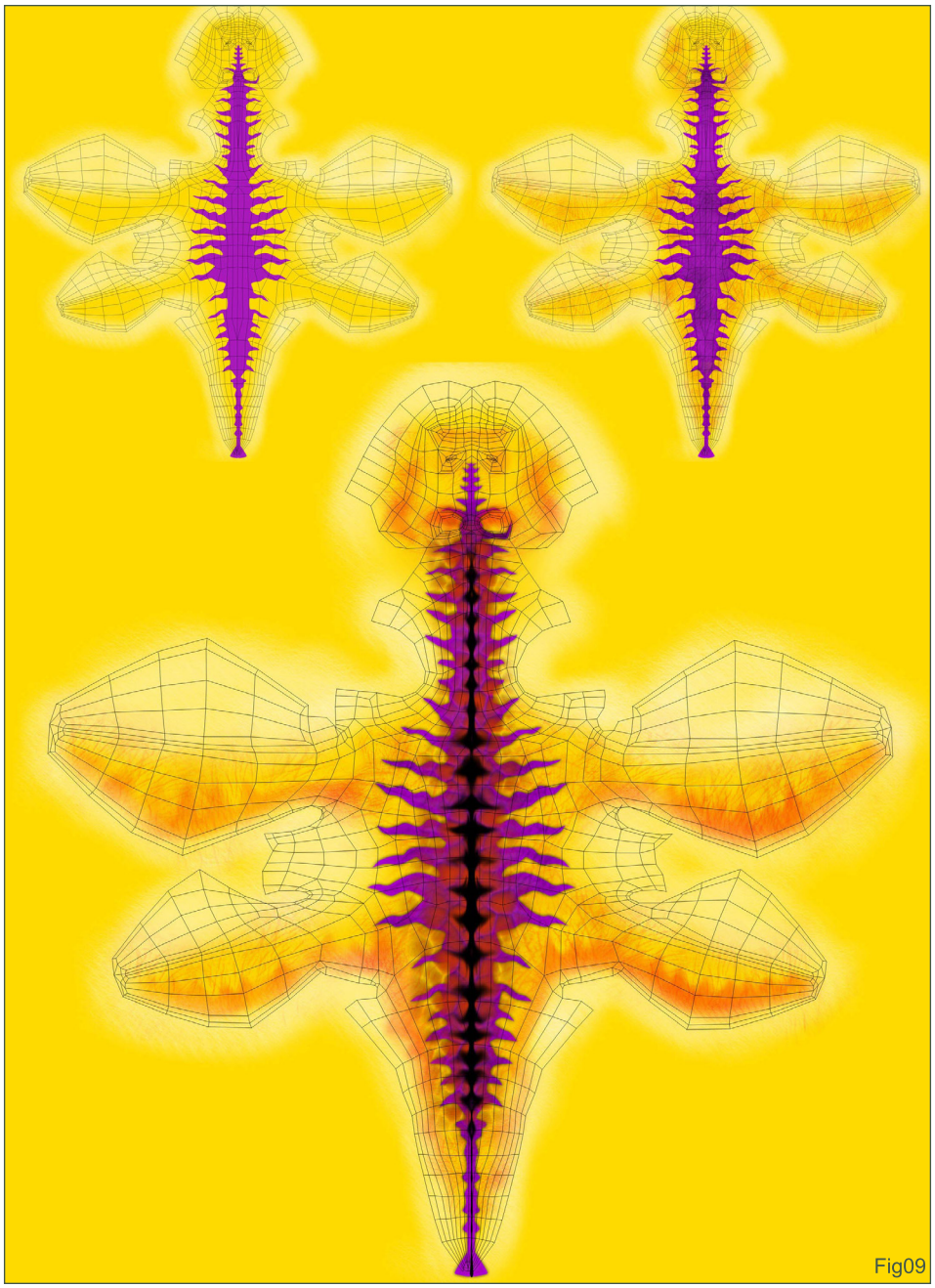

Fig07

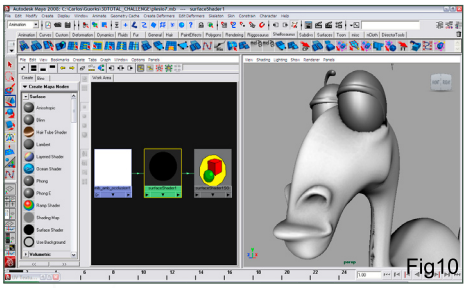

Fig08

some UV mapping issues at texturing time, I built the eyelids as separated objects, starting with a half 6 x 6 polygonal sphere. The eyes are just a couple of stretched NURBS spheres. The plants are inspired by many ones I used to see in palaeontological books when I was a kid. I just extruded a plane along a NURBS curve, duplicated it several times and deformed each one with a lattice (**Fig06** and **Fig07**).

Texturing

Once I unwrapped the model, I fixed some overlapping, relaxed some areas and exported the UVsnapshots (**Fig08**). For the eyes and eyelids, I just applied a spherical mapping directly in Maya. All the textures were hand-made in Photoshop with a few custom brushes. I took the colours from the original sketch and painted some patterns onto the texture (**Fig09**). Back in Maya I baked an occlusion pass and took it into Photoshop. Then it was colourised and multiplied over the whole texture to give the final character those orange zones on the body (**Fig10** and **Fig11**). For the bump and specular

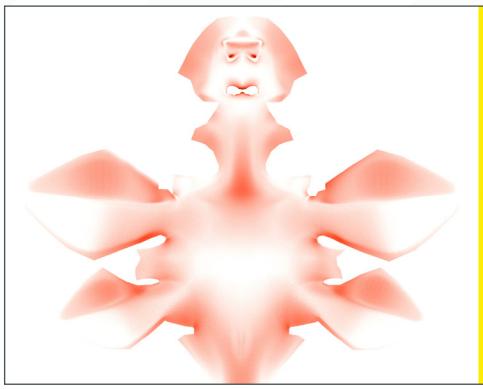

Fig09


Fig10

maps I took only the layers containing the scales and skin info (**Fig12**). The rock texture was made from a photograph, and the plant material is just a procedural one.

Rendering

Due to some crashing issues I had back in December between my computer and Maya's Mental Ray, I decided to render in another application. So this time, the whole scene was



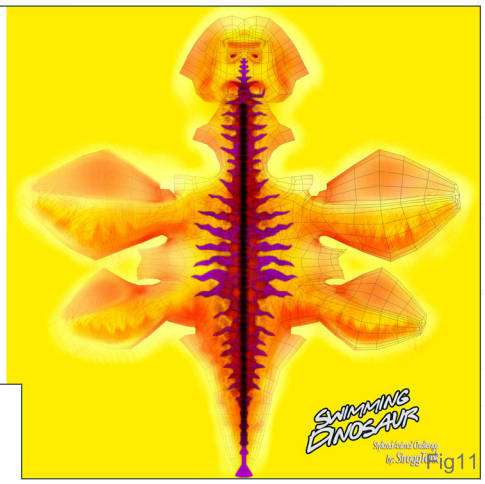
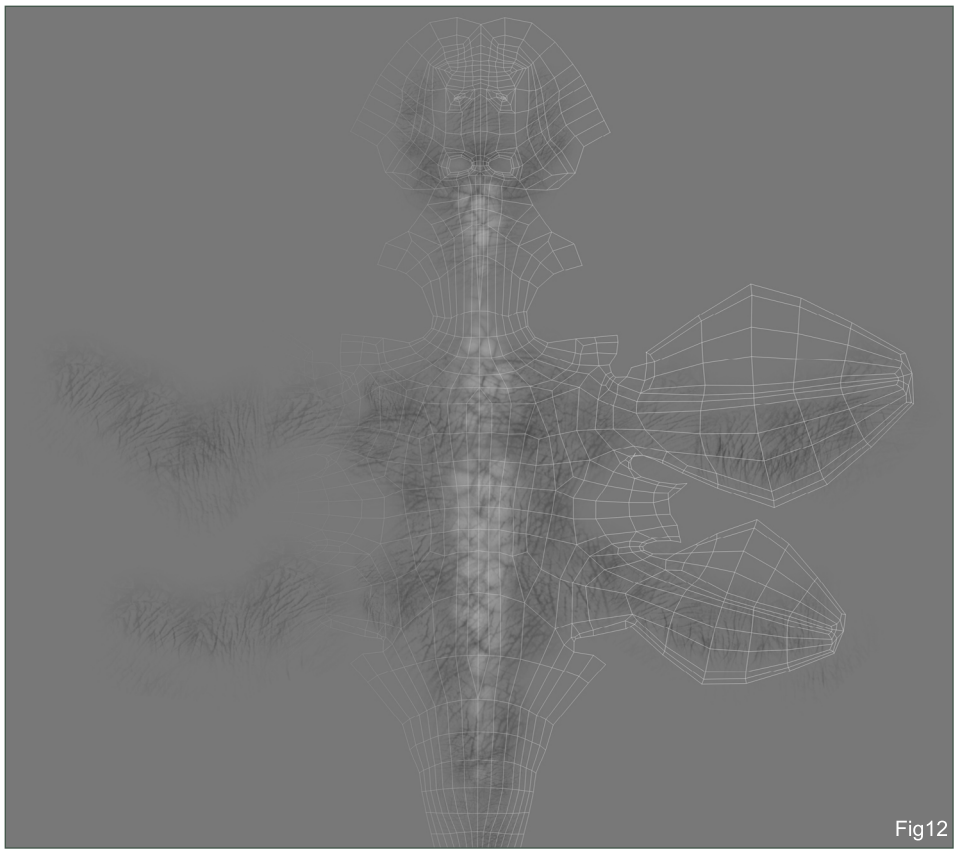
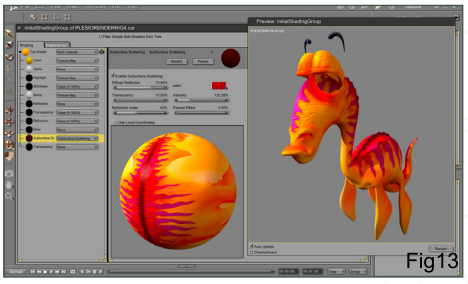
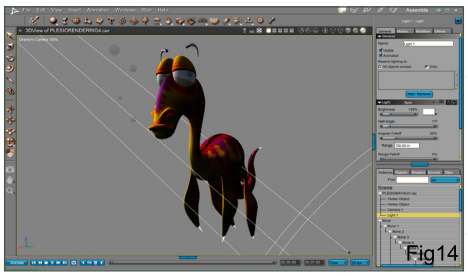


Fig11


Fig12


Fig13


Fig14

imported as an OBJ into Carrara 6. Carrara's integrated render engine has a fast and pretty simple way to setup, with fair enough results. The hard part in the shading process was the translation of the values from one application to another to make the shading network look the way I wanted in the first place. The biggest problem was the Sub Surface Scattering channel, cause Carrara doesn't allow texture maps, just colour values, so I was unable to use the SSS map I already had in Maya. This caused some blown out lighting in some parts at the back of the model, which was supposed to be black (**Fig13**).

The lighting setup was also very simple: a spotlight aimed at the model with a high value (**Fig14** and **Fig15**). To simulate the underwater lighting, in Photoshop I made an image with

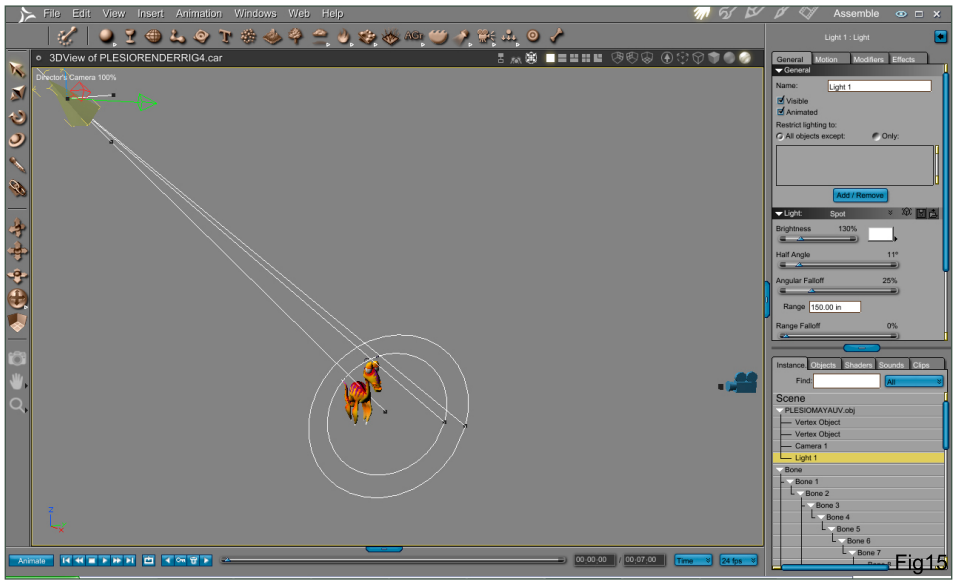


Fig15

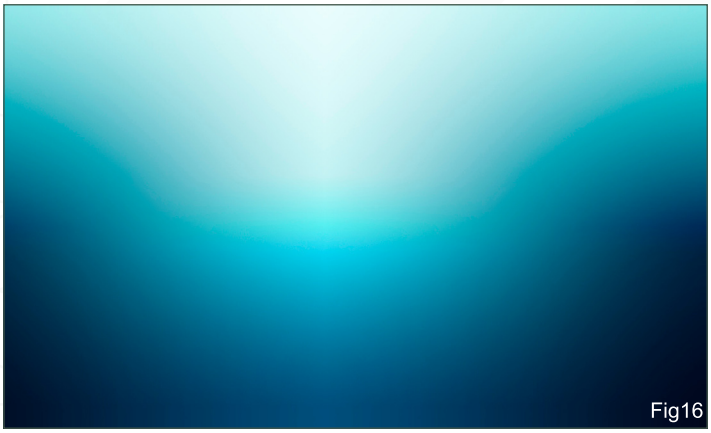

Fig16


Fig17

blue gradients to work as an HDRI map (**Fig16**). In the render settings I just turned the GI and Indirect Lighting on. The final render took 16 minutes at 2400 x 1800 pixels. The plants and rocks were rendered in a separate file with the same rendering settings (**Fig17**).

Post Production

For the final look of the image, I created the background with some preset brushes in Photoshop. I added some DOF to the dinosaur and plants using their respective depth passes. Those ones were also used to add a blue depth to the character environment. The underwater rays are just white layers with motion blur in screen mode.

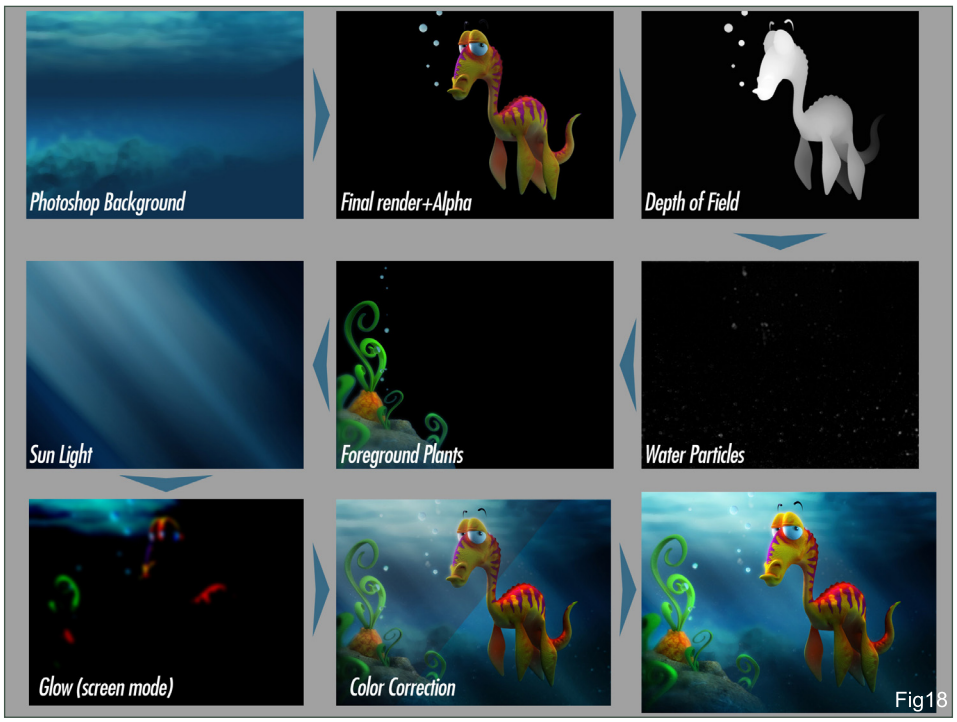


Fig18


Fig19

The last touches were the particles, the glow on the brightest parts of the image, a subtle colour correction to avoid the loss of the colour scheme in the dinosaur, and there you go: “Erasmo, the Plesiosaur!” (**Fig18, Fig19** and **Fig20**).

I hope you have found some of this useful. I had a lot of fun with this competition; thanks to all who voted for me, and thanks also to 3DTotal for the opportunity to write this Making Of. See you in the next competition!

Carlos Ortega Elizalde

For more work by this artist please visit:
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Fig20


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Bugatti Veyron

car modelling series

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3DSMax Version
Page 117

Cinema4D Version
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Lightwave Version
Coming Mid Month

Maya Version
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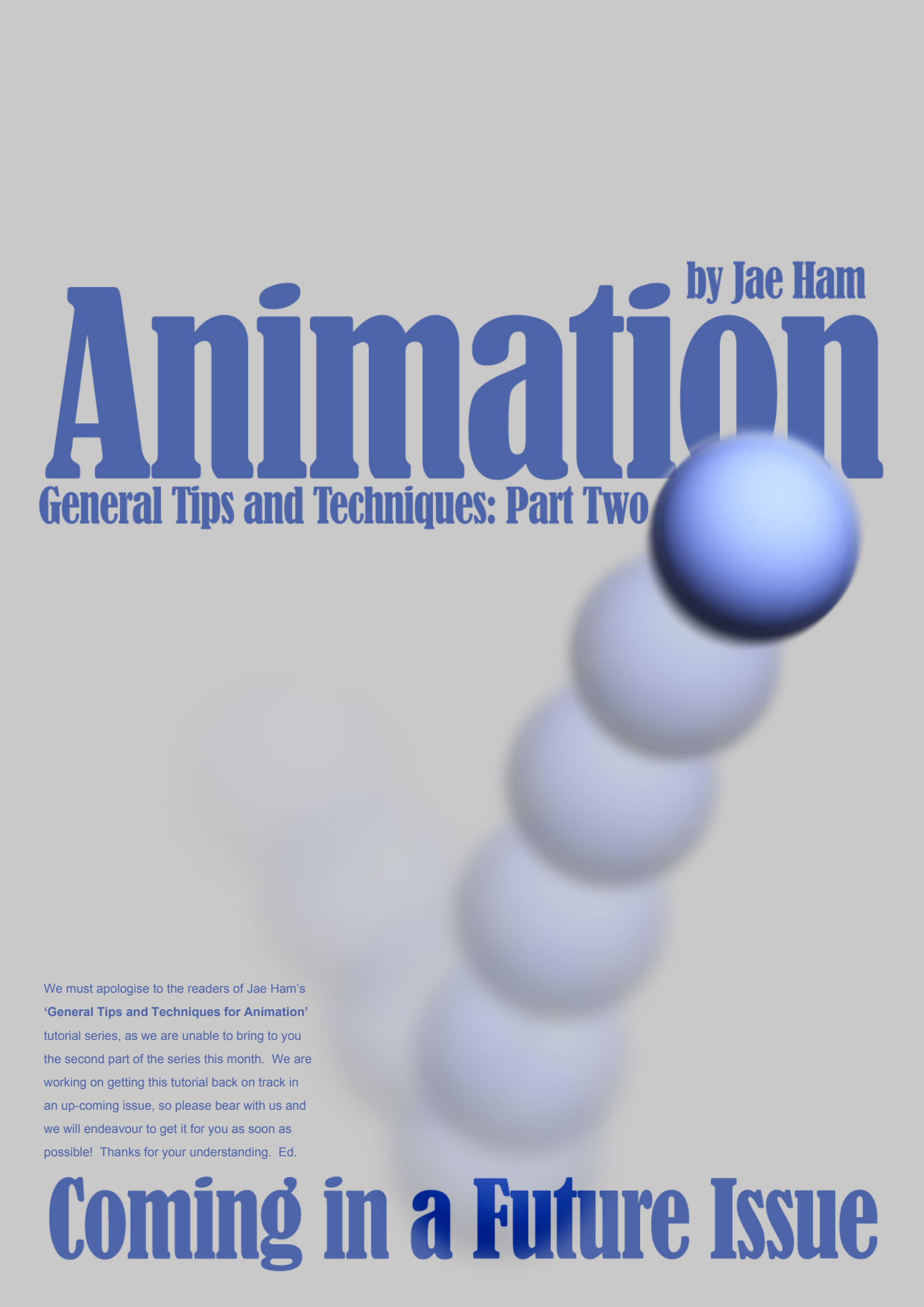
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Animation

General Tips and Techniques: Part Two



We must apologise to the readers of Jae Ham's **'General Tips and Techniques for Animation'** tutorial series, as we are unable to bring to you the second part of the series this month. We are working on getting this tutorial back on track in an up-coming issue, so please bear with us and we will endeavour to get it for you as soon as possible! Thanks for your understanding. Ed.

Coming in a Future Issue


"When moving areas such as limbs and other body parts, it's always best to use long flowing movements with your mouse"
For all of you out there who have heard of, but are unfamiliar with, ZBrush then this new 7 part tutorial series by Wayne Robon is for you. The Total Beginner's Guide to ZBrush is an excellent starting point to get you into the world of ZBrushing
BEGINNER'S GUIDE
TO ZBRUSH PART 2 BY WAYNE ROBSON

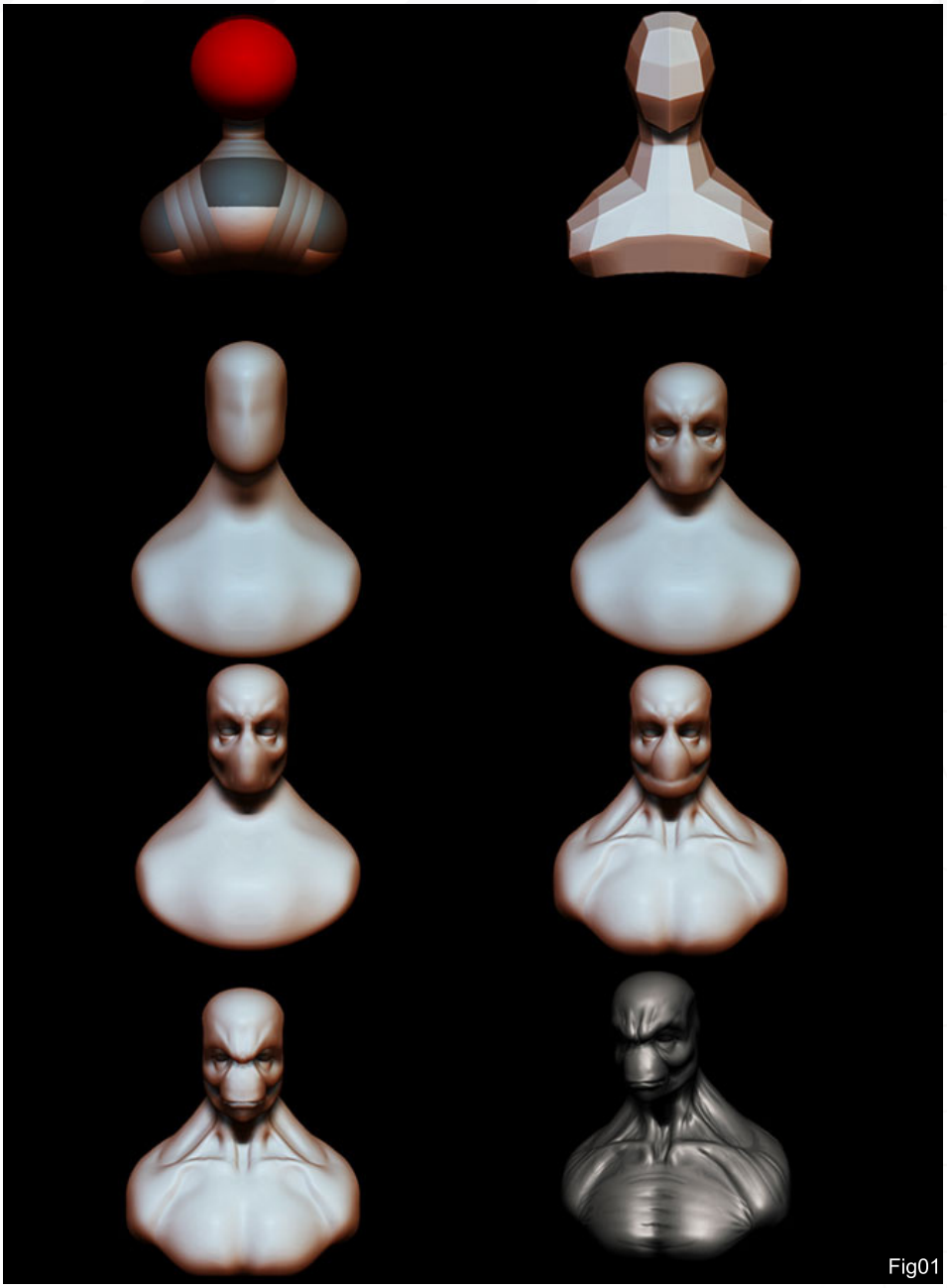
BEGINNER'S GUIDE TO ZBRUSH PART 2

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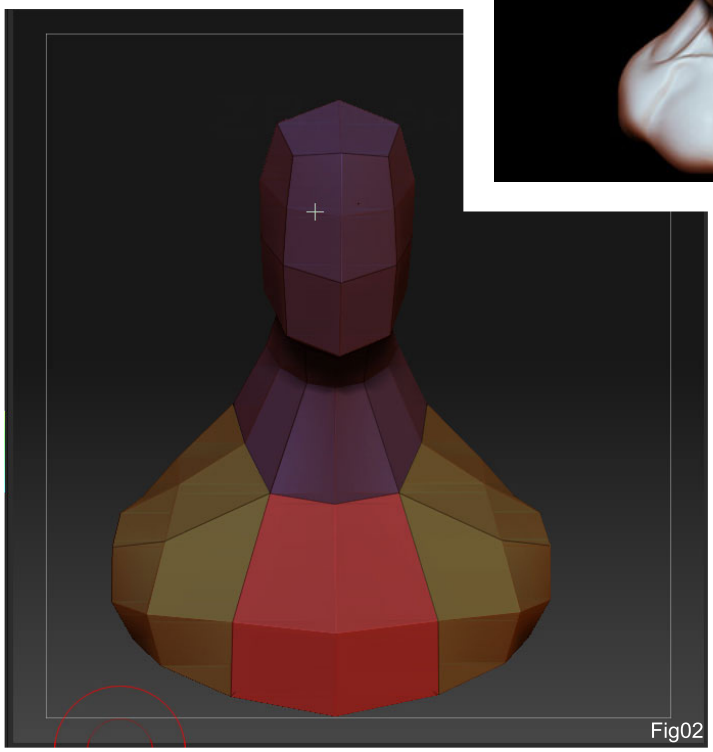
Introduction

In the last article, after giving a very basic overview of some of the main features of ZBrush, we made our basic Zsphere base mesh. So in this section we will continue with the project by taking this base mesh and starting to sculpt it. This part of the series will introduce you to some of the common brushes used in ZBrush for low and medium resolution detailing (**Fig01**).

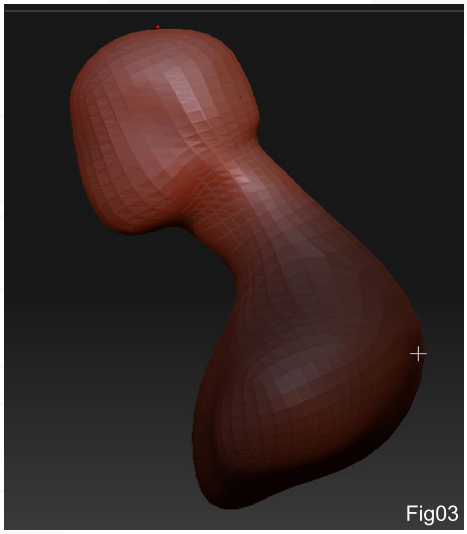

Fig01

Modelling

First of all we need to make sure that we move some of the vertexes around on our base mesh. This will allow us to make sure that we have resolution where we need it, as opposed to where we don't. As the polygon count increases by a multiple of 4 each time we subdivide our model, we need to bear in mind that it is important not to waste polygons where they aren't going to be needed. So we start off by moving some around the eventual eye area, using the move brush set to a size of '1'. It's important to make sure that we do in fact have X symmetry enabled by hitting the 'X' key. This allows us to move the exact vertex we want, without having to worry about interfering with others that we don't want to touch.


Fig02

Next we move some vertexes around the shoulder, neck and sternocladomastoid area so that we have the geometry flowing in the direction that we need it to be as we continue with the digital sculpture. This is an important step as it stops us having to go into very high polygon counts where it's not needed and allows us to save some of those polygons for the final detailing. We can also do some very basic changes to the shape of the head, and get things so that it looks at least vaguely human-esque (**Fig02**).


Fig03

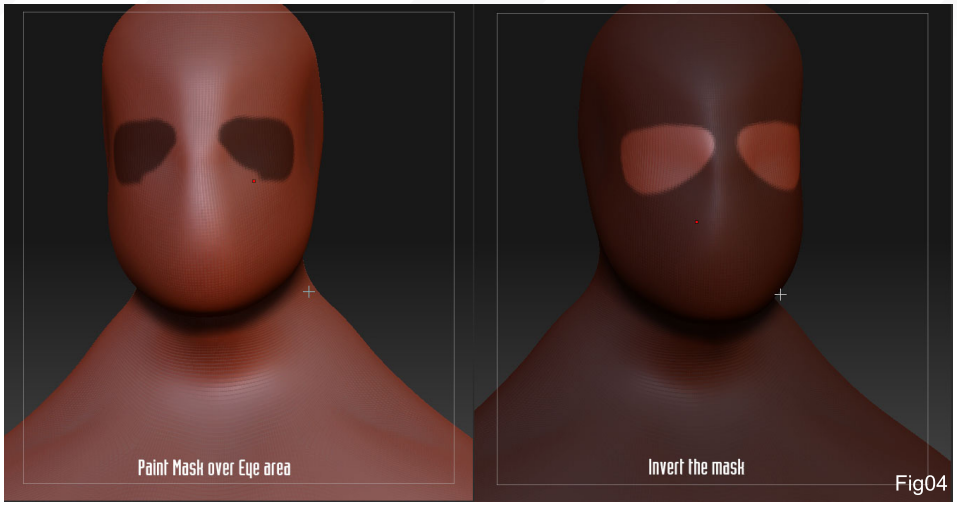


Fig04

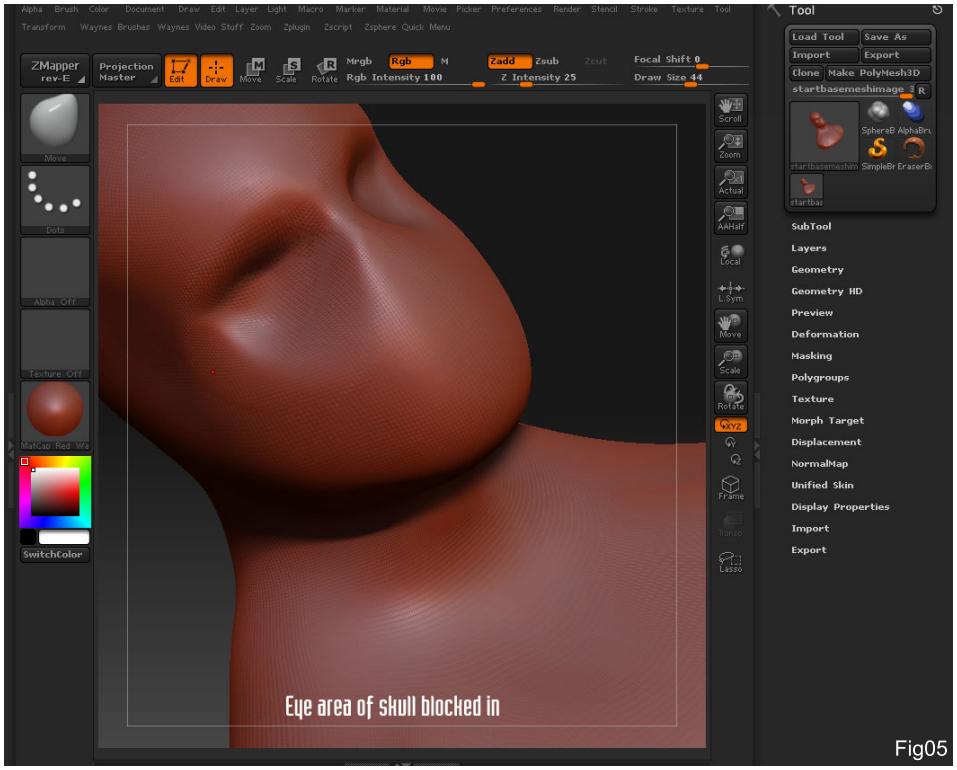


Fig05

At this stage I wanted to shorten the neck a bit, so I selected the Move tool (not the Move brush, the Move tool which can be found on your toolbar or in the transform menu), and with X symmetry still enabled, hold down the Shift key and draw in an upwards direction to just a bit above the collarbone. This will draw a mask for us on the area that we do not wish to affect. It will also automatically blur this mask to help smooth the transition of our moves. When moving areas such as limbs and other body parts, it's always best to use long flowing movements with your mouse (where possible). The reason for this is that if you use a series of short strokes, you can end up with both an irregular looking posed area and loss of rhythm in the pose itself (**Fig03**).

Now we need our action lines to be in place before making any moves on our geometry at all. An action line has a line with 3 circles drawn upon it; if you drag by the edge of a circle it will move the circle itself into a new position (moving the centre circle will move the whole action line). If you drag from the centre of any circle it will affect your geometry using whatever transform tool you have active at the time. As such you can use either the Move, Scale or Rotate transform tools with an action line.

So start by drawing your action line from just above your masked area (making sure the line starts in the centre of the neck if looking from the side) and hold Shift as you draw slightly above the top of the head. Press 'X' to turn off your symmetry for a moment and, by clicking and dragging on the centre circle, move it so that it is now in the very centre of the geometry when looking from the front. You can now gently move the neck down a bit and press 'X' again to turn symmetry back on. After making sure that you are satisfied, press the Edit button on your toolbar to exit the transform tool.

We are now ready to subdivide our model 3 times by using either the Divide button in the geometry section of the Tool palette, or by hitting Ctrl+D. Make sure that you have the Standard brush selected and the default 'Dots' stroke type. Hold down Shift and draw in the basic shape of the eye holes in a human skull as shown in the image. As this isn't a human bust, we do have a certain amount of room for interpretation. However, I would say that it's always a good idea to have a number of human references for both the skull and muscles handy, as this helps to make your sculpt more believable. Just because we're creating something from fantasy doesn't mean that we should ignore the rules of anatomical construction! (**Fig04**)

Now click once on an empty part of the canvas to invert the mask, switch to the Move brush and pull the eye areas into the head a little. Once done, hold down Ctrl and drag on an empty part of the canvas to remove the mask completely. We can temporarily change to the Smooth brush when we have most brushes active by holding down the Shift key - do that and lightly smooth out the transitions around the eye areas a little. For those of you that find that the revised Smooth brush in ZBrush 3.1 feels a bit different to the older one in V3 and V 2, I'll provide a link to my own version, which works the same as the old Smooth brush. To set it as your default, simply open it up (or put it into your Start-up folder in the Brushes folder, and hold down the Shift key and click on it from the brush palette in ZBrush). It will now be your default Smooth brush whenever you hold down the Shift key. Should you need to, you can add any number of custom, alternative brushes this way (**Fig05**).

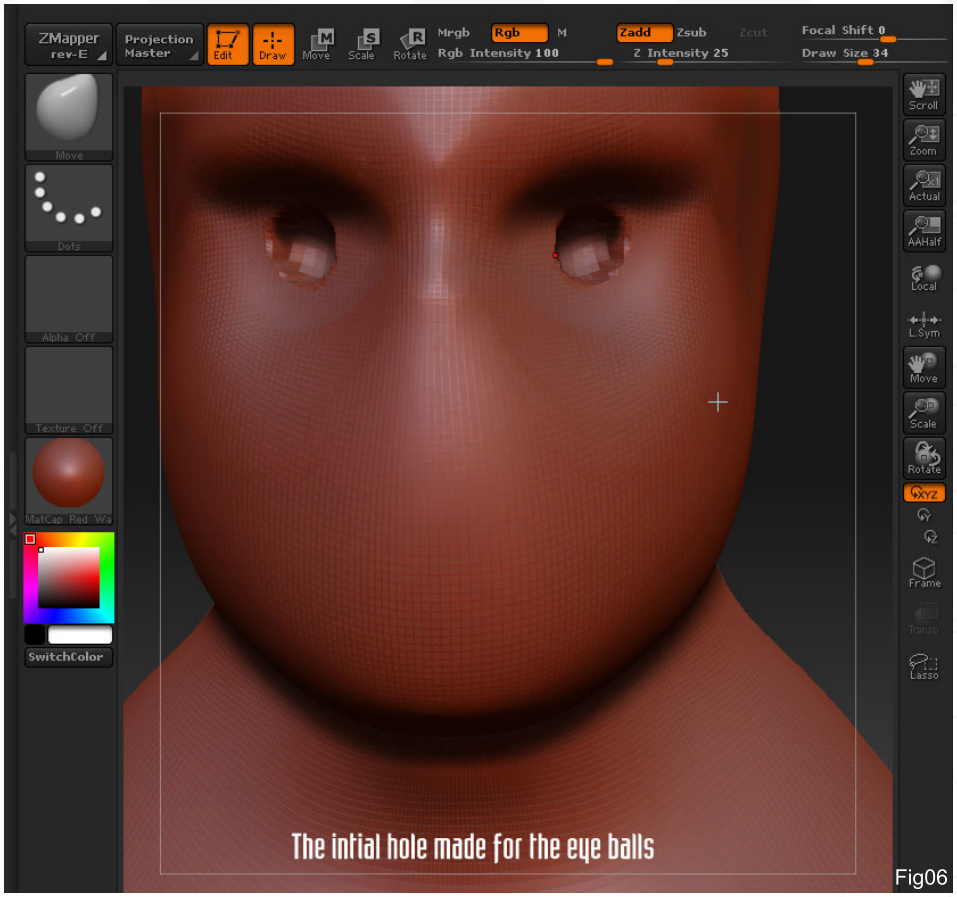


Fig06

Hold down the Ctrl key again and draw in a circle that will eventually become our eye holes. Don't make them too big at this stage as we will be doing a lot of work on them in the following articles. Switch to your Standard brush, press the Alt key and draw to push the geometry inwards as shown (**Fig06**).

Now remove the mask you did before and gently move the eyes so that they are a little bigger. Again don't worry too much about them at this stage as we will be working on them more as we progress (**Fig07**).

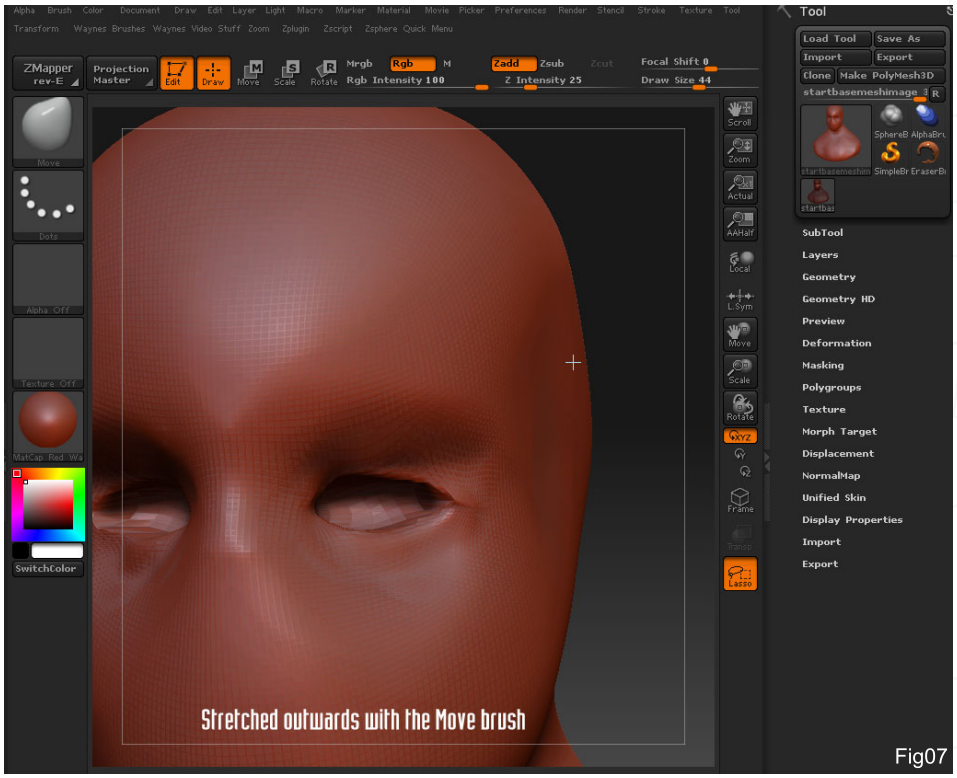


Fig07

Having said that, you will want to move the centres of each eye now, so that they have a curve to them and the eyeball will be a better fit once we once we add it. You can do this best by holding down the Shift + Ctrl keys and dragging over the area you wish to keep around the eyes. It's much easier to add a curve to the eyes by looking from the inside behind them and above. (Do make sure that you have 'Double' on in your Tools >> Display section by the way.) (**Fig08**)

Shift + Ctrl and click on a blank area of canvas to show everything again. Quickly mask off the eye area and pull the eyes further back into the head (if need be). Be sure to clear the mask when you are done. If you find at any point that a mask has a little too hard a transition you can further blur it by holding down Ctrl and left clicking somewhere on the mask itself (**Fig09**).

Now taking the Clay Tubes brush, start to beef up some areas such as the jaw bone, cheek bones and eyebrows by running it in smooth strokes over these areas. A ZIntensity setting of between 10-13 should do nicely; adjust your brush size as needed. Smooth these areas out using the Smooth brush before continuing - you aim is to keep the forms that you have just created, but lessen any sharp transitions between different areas of the face. For those of you with traditional sculpting experience, this stage can be thought of as similar to setting up the planes of the face, although in this case we are only adding flatter areas of digital clay where we need them to define our main forms. Holding down the Alt key, use the same brush to hollow out the cheeks area slightly and smooth this out a little again. We now want to beef up the nose and mouth area, as we will be adding a beak at a later point. As you will have no doubt noticed by now, at this stage we are only concerned with getting our large shapes and forms blocked out in a fairly rough way. This enables us to go back over these areas and refine them later (**Fig10**).

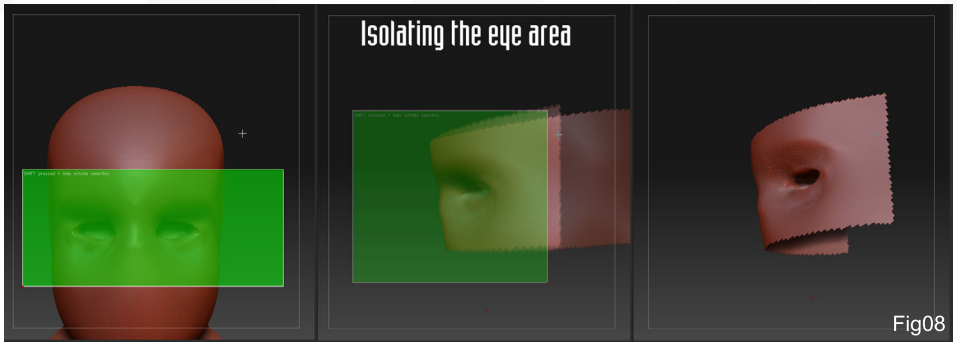


Fig08

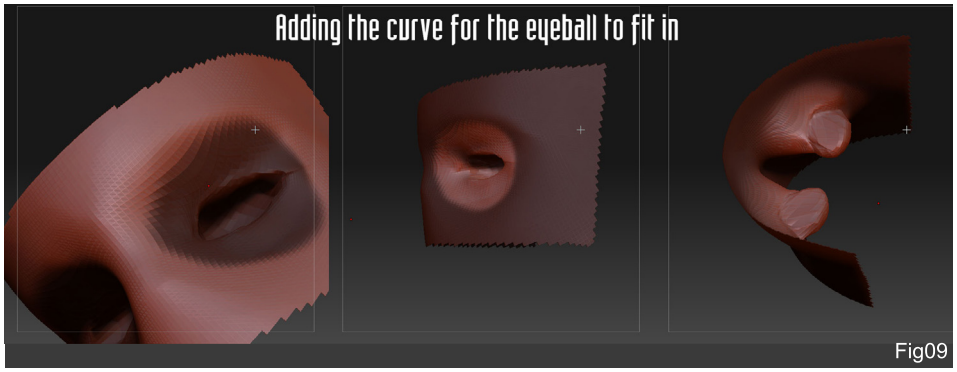


Fig09

Using the Move brush, make sure that the mouth isn't flat from the side and he doesn't look like he has been hit in the face with a shovel. One of the main issues that people new to ZBrush have when doing a human-esque head, is that they make the front of the face too flat. The human face is not flat! The mouth area is like a flattened horse shoe shape. While it's outside of the remit of this series to go into human anatomy in detail, I would urge those new to ZBrush to (at the very least) have plenty of references handy. This is also a good time to do some last major form changes, if need be. In the next article in this series, we are going to start making this model look a bit more pleasing to the eye and continue to block out the torso. Don't worry if you find it takes you a long time to complete this section, getting your initial forms correct is the most important part of a digital sculpture because without it, no matter how hard you try later it will still not look 'right'. Your homework for next time is to practise what you have learned so far in the first two articles of this series and try and find plenty of reference photos on Google of human heads and torsos. If you have access to an anatomy book, that is even better. See you all next time.

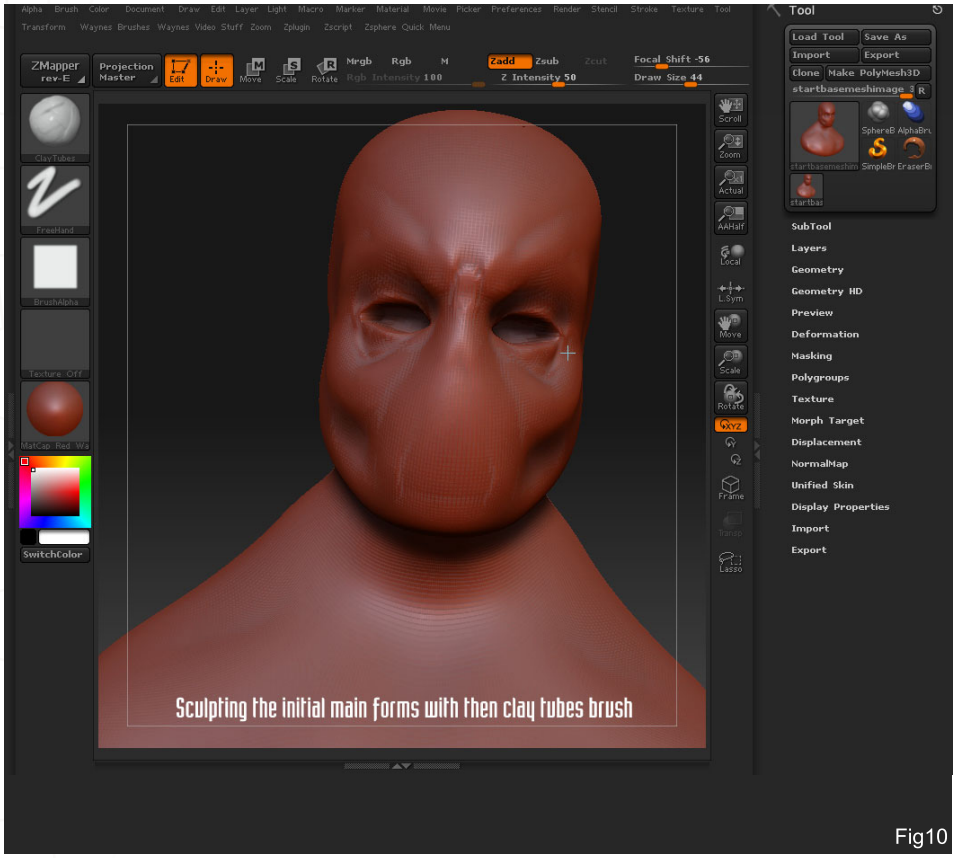


Fig10

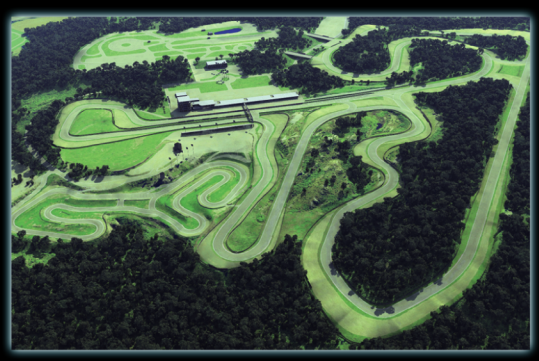
Wayne Robson

For more from this artist visit:
http://www.dashdotslash.net
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Pictures by Eran Dinur, Dragos Jieanu, Jørgen Holo, Ken Wellings

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VFS Student work by Zheng Tang



"When I started this project, I didn't have an exact concept for what the final image would look like. I only had a rough vision in my mind"

Alexander "shultz" Nadein takes us through an in-depth look at how he went about creating his scene.

Guitar At Construction Site

CREATED IN:

Modo (modelling, UV), 3ds Max (environment, scene gathering), Maxwell Render, Photoshop (textures, post-processing).

INTRODUCTION

This is an old project that I started about a year ago and only finished recently, because my free time kept getting interrupted.

CONCEPT

When I started this project, I didn't have an exact concept for what the final image would look like. I only had a rough vision in my mind; I knew that I wanted to put a guitar in an unsuitable place, where it could contrast with its environment, but that was about it. Starting a project without having a clear concept is not something I would recommend, but I'm used to it by now. However, it did mean that I ended up making lots of different textures and models that I didn't use, but I don't see the time as wasted because it allowed me to develop my skills and my experience.

These are some of the images of construction sites that I found on Google and then used to make my environment. (**Fig01, Fig02** and **Fig03**)

MODELLING

I don't normally work a lot in Modo and this project gave me a good chance to improve my skills. So it was important to me to make a very accurate model, even if not everything would be visible in the final image. I wanted to make sure that whatever position the camera was in, it wouldn't uncover parts of the model, or any objects, that were lacking in detail.


Fig01


Fig02


Fig03



Fig04

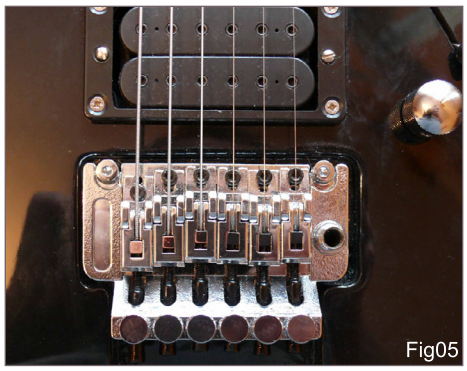
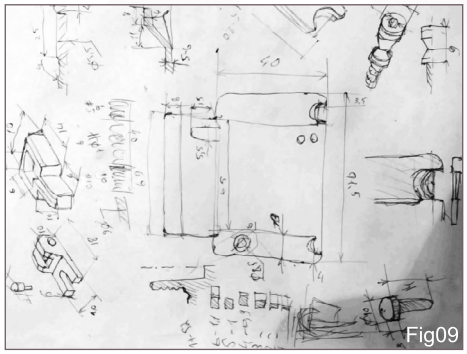

Fig05

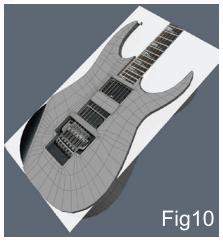


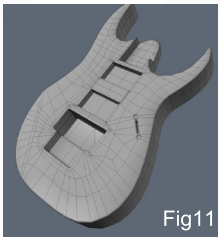
Fig06

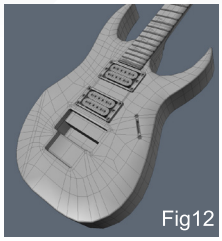

Fig07

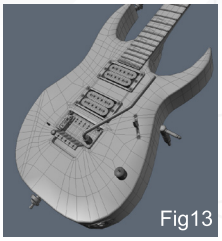

Fig08


Fig09


Fig10


Fig11

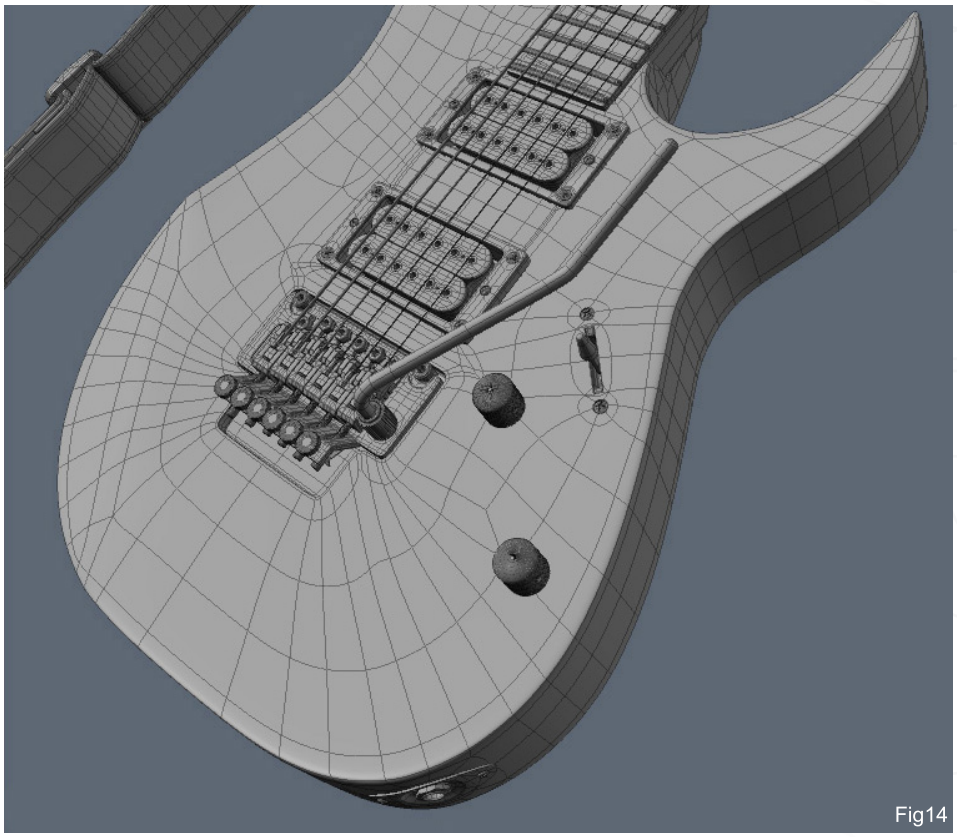

Fig12

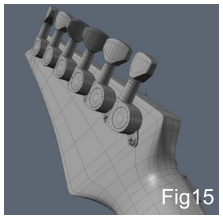

Fig13

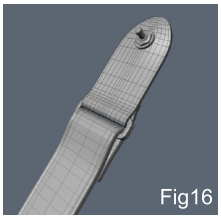
In terms of the guitar, the first thing I did was take photos of my own instrument, so that I could use them as references and a source for textures. Then I drew sketches of all the small details on the guitar and marked all the necessary measurements. It was pretty useful to be able to model my own guitar, because it was much easier then trying to find good reference photos on Google. However, I did end up taking the front view photo from the Ibanez website, because although it's not exactly my guitar, it's similar enough (**Fig04, Fig05, Fig06, Fig07, Fig08** and **Fig09**).

I'm not going to go into much detail about the modelling process. Modelling in Modo is not too different from other similar software packages. I made many interim saves of the project in separate files, so that I can show the different stages of modelling (**Fig10, Fig11, Fig12, Fig13** and **Fig14**).

And final result close up (**Fig15, Fig16, Fig17, Fig18, Fig19, Fig20** and **Fig21**).


Fig14


Fig15


Fig16

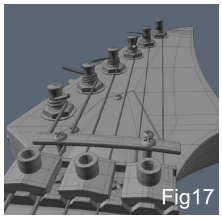
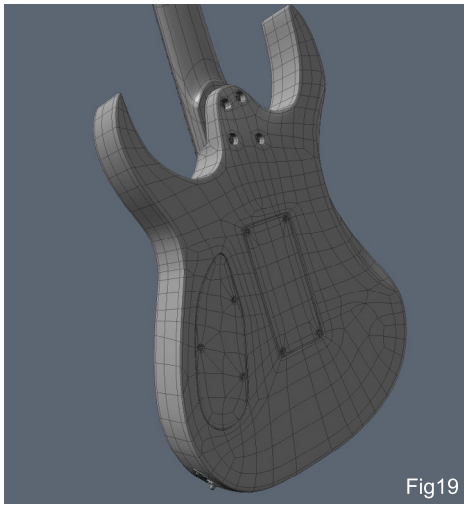
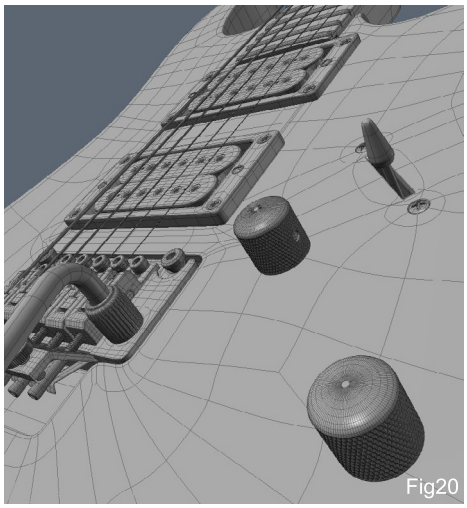

Fig17


Fig18


Fig19


Fig20

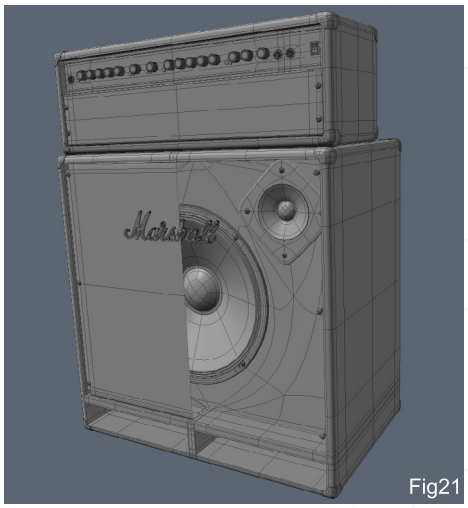
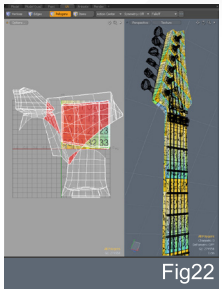
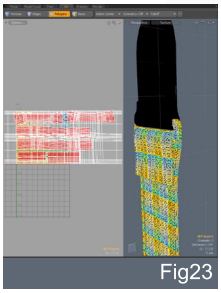


Fig21

TEXTURING

Mapping was another area where I didn't have any issues - Modo have very good tools that allow you to make a UV map quickly. Only some of the objects had to be unwrapped, others needed a simple box or planar mapping, and some didn't need any mapping at all.
For the environment, I used textures from cgtextures.com (**Fig22, Fig23, Fig24** and **Fig25**).


Fig22


Fig23

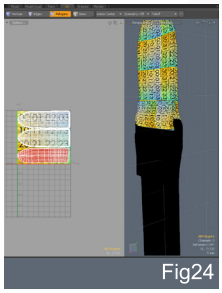

Fig24


Fig25

You can see how I made the texture for the concrete wall (**Fig26**).

When I made the grill for the amplifier and cab, I used four pairs of textures, opacity and normal maps. This method allowed me to use several small tiled textures instead of one huge texture, while at the same time it still looks like a high resolution map (**Fig27** and **Fig28**).

Here you can see other textures that were used (**Fig29**).

Adjusting materials is pretty simple in Modo as it doesn't have tricks and fakes, such as VRay has. Combining BSDF layers with different material properties is the only ruse I used. Glossy with rough gave an interesting effect, but remember: more layers means more render time.

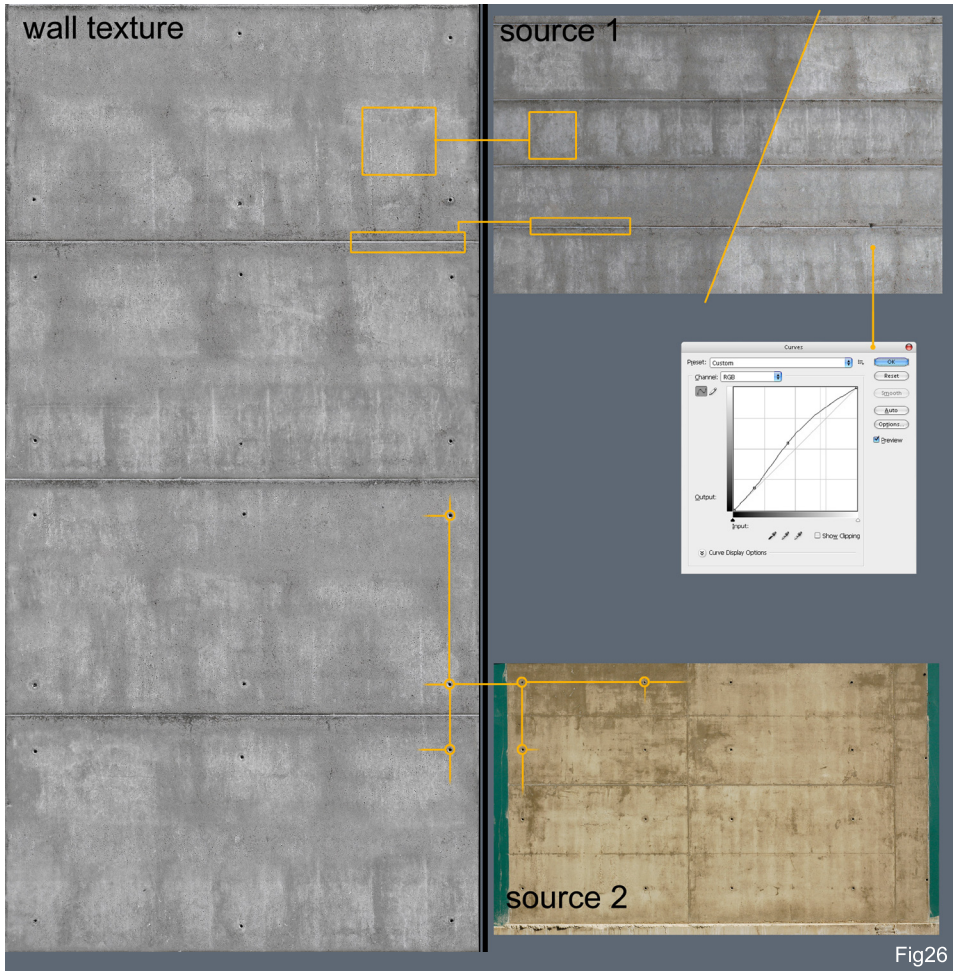


Fig26



Fig27

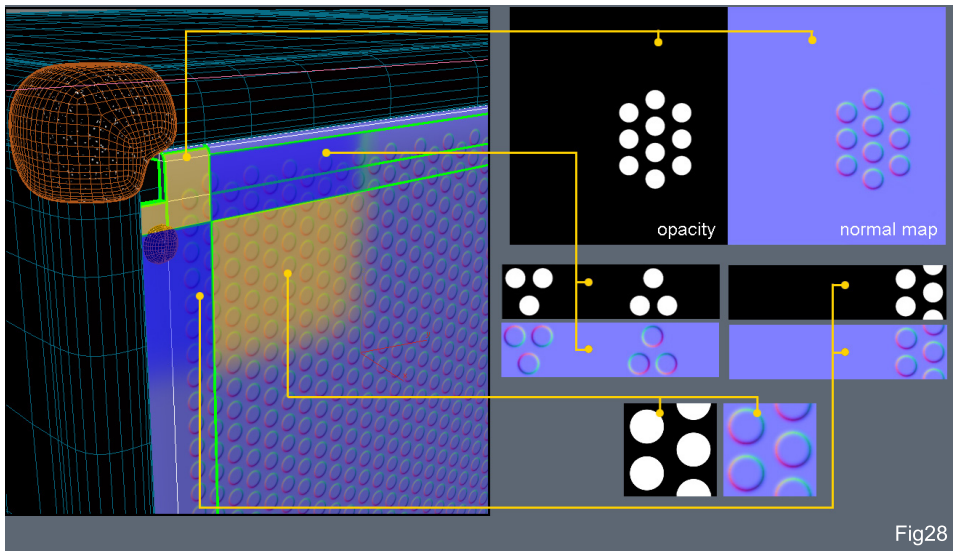


Fig28

These images show some of the materials that were used (**Fig30** and **Fig31**).

Environment and Rendering

All the light sources I used are simple plane objects with a Maxwell Material emitter. I used the Highlight tool in max to make a nice reflected light source in a specific place on the object.

I applied a noise modifier to subdivide the wall so that it didn't look too flat (**Fig32, Fig33, Fig34** and **Fig35**).

As you can see, the main image (guitar with an amplifier) doesn't make it possible to see all the details. So I decided to make additional renders, but in a different environment - such as a studio (**Fig36** and **Fig37**).

As this image shows, there aren't any specific settings. Everything is extremely simple (**Fig38**).

The most important thing is the camera settings, because the camera in Maxwell is similar to a real camera (**Fig39**).

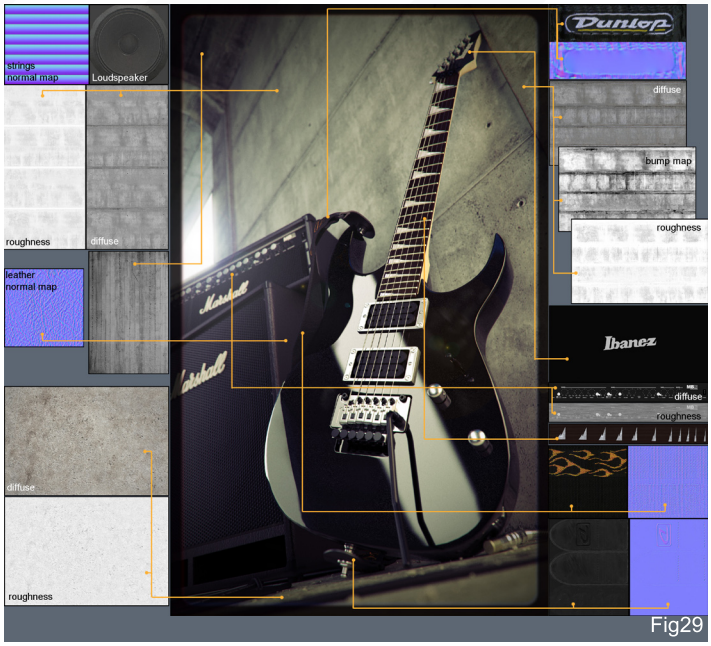
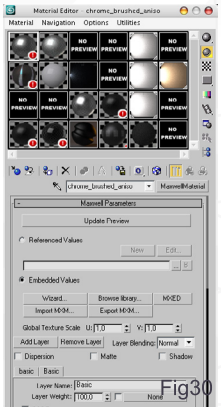
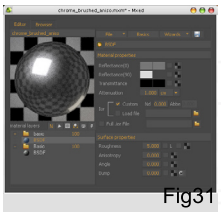


Fig29


Fig30


Fig31

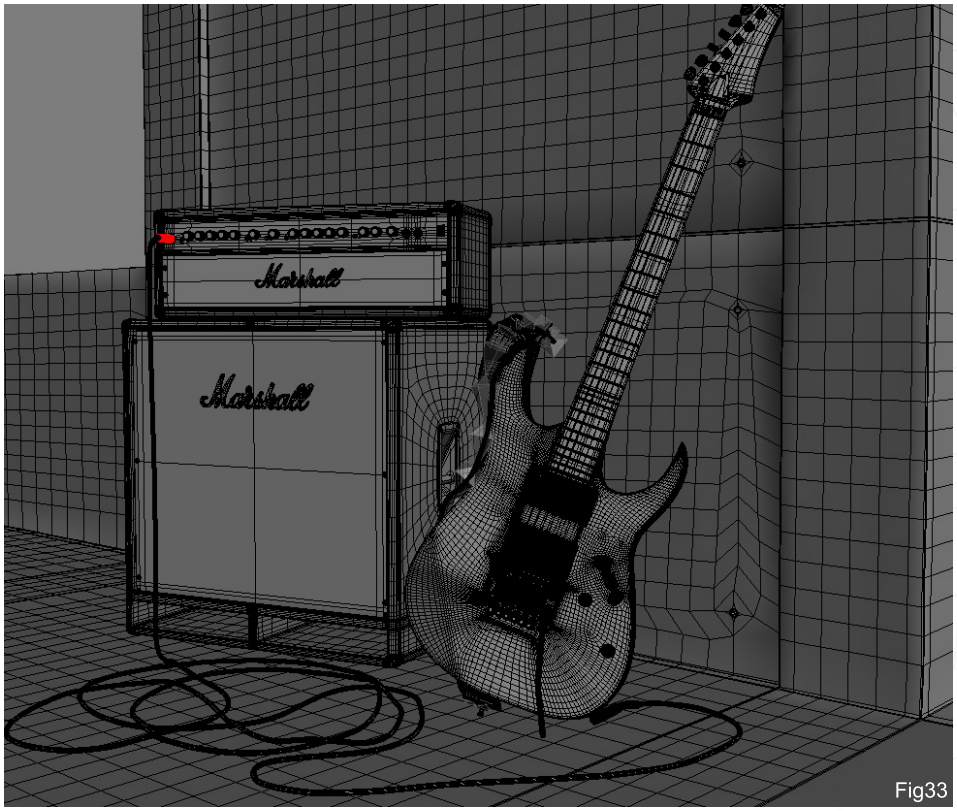


Fig33


Fig32

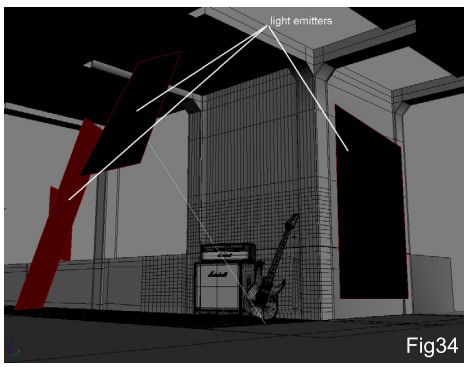


Fig34

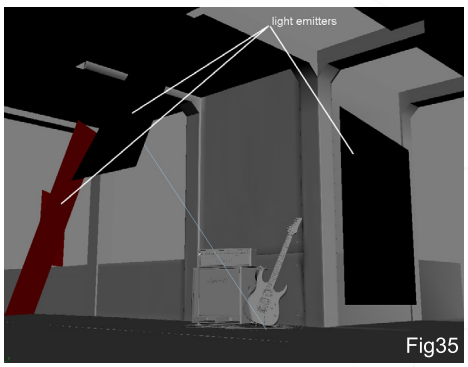


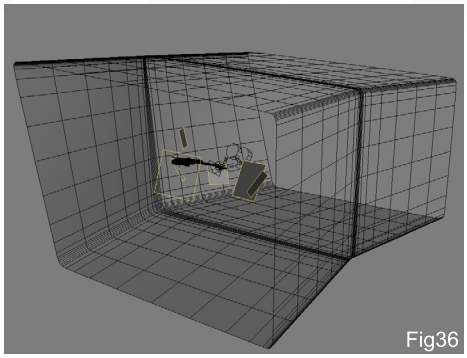
Fig35

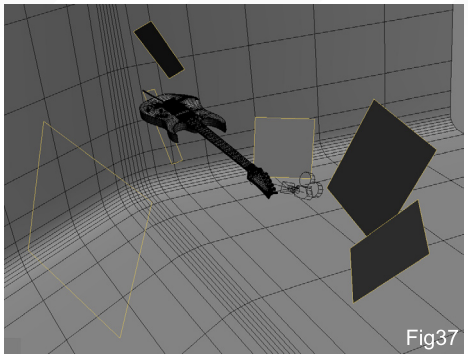
SOME TIPS

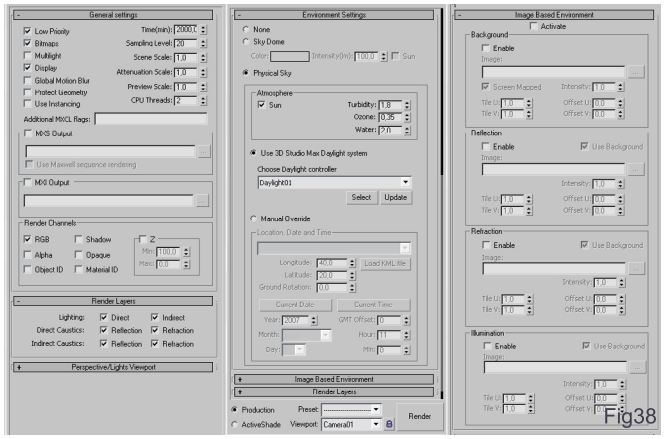
Closed rooms increases render time due to the many reflections of rays of light. Exterior renders are much faster, so let the light rays flow out from scene.

Naturally, many light sources increase the render time too.

Multilight features increase memory usage. To get around this, I make one separate material for each light source and then I make a test render with Multilight, adjusting the light's intensity and remembering the value. Finally, I edit the value in the material according to Multilight in the render. For example, 200 units in Multilight for 50 watt light would


Fig36


Fig37


Fig38

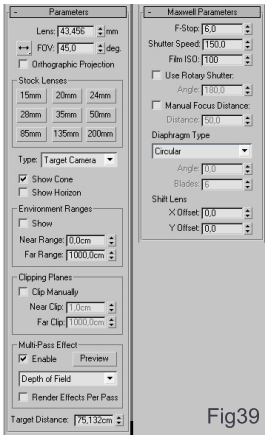

Fig39



Fig40


Fig41


Fig42

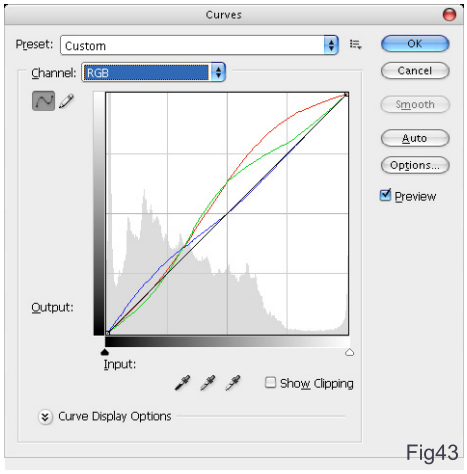


Fig43

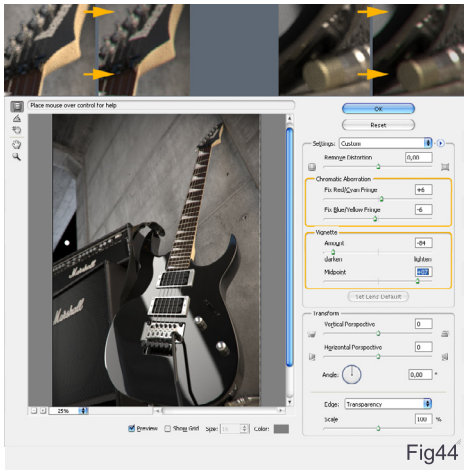

Fig44


Fig45

correspond to a 100 watt light. Now you can disable Multilight in render properties, have the same result and save memory.

Here you can see some of the render tests (**Fig40, Fig41** and **Fig42**)

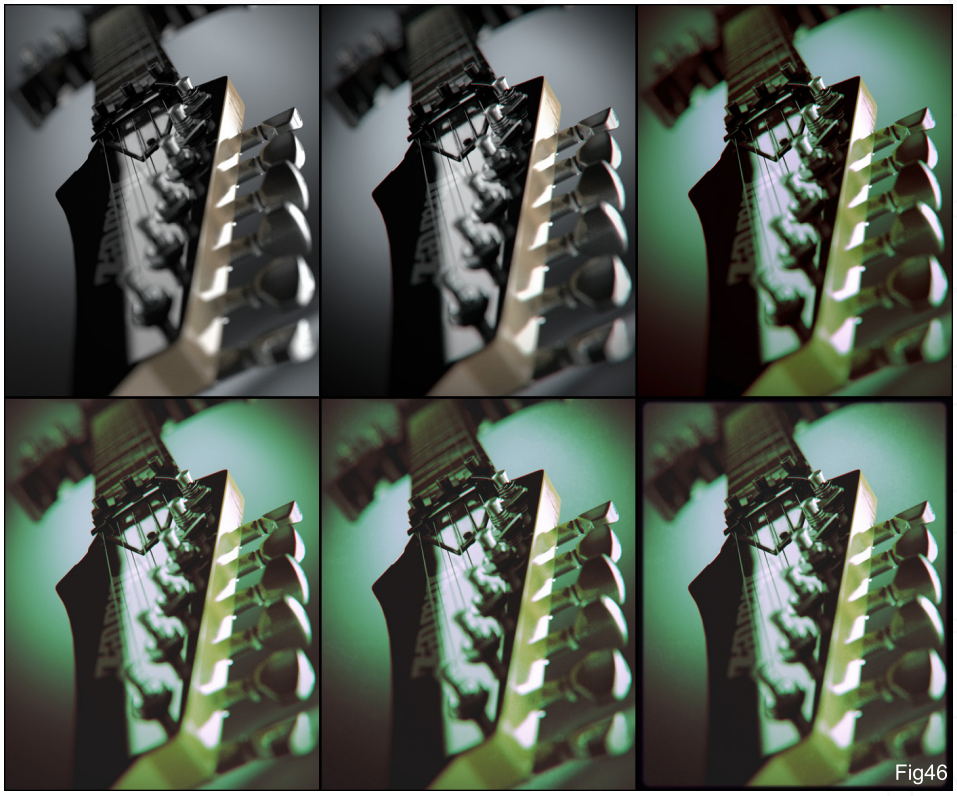
Postprocessing

Postprocessing was the easiest stage. I used Curves for colour-correction, with the settings that you can see on the image below. It gave everything a green hue and added some blue to the shadows (**Fig43**).

I also used 'Filter>Distortion>Lens Correction' with the set up Chromatic Aberration and Vignette, Lens Flare Effect and Add Noise Filter (**Fig44**).

I then made fingerprints and glow in Photoshop.


Fig48


Fig46

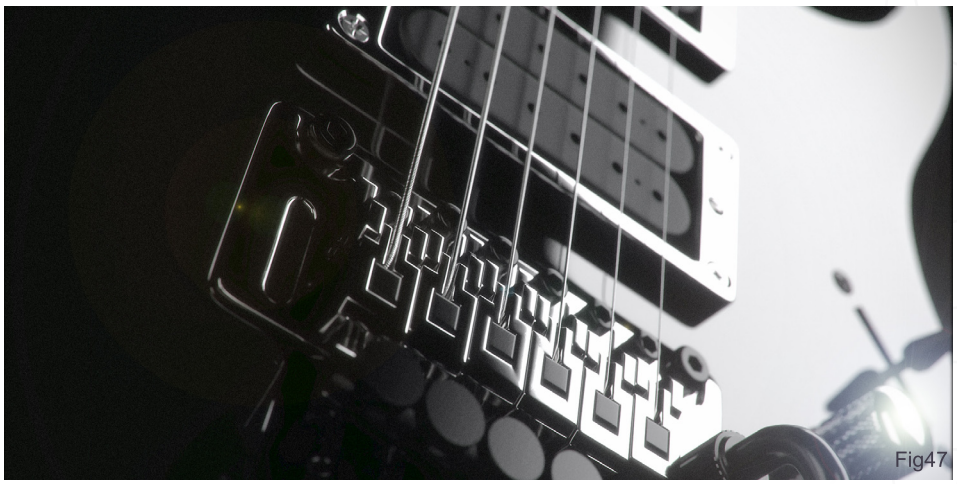

Fig47



Fig49

The step by step stages of post-processing can be seen from left to right and up to down (**Fig45** and **Fig46**).

And here is the finished image. I have supplied some close-up shots which you can see in **Fig47, Fig48** and **Fig49**

Guitar at Construction Site

For more from this artist visit:
http://blackgeyser.awardspace.com/
Or contact:
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nPower CAD Translators for Maya

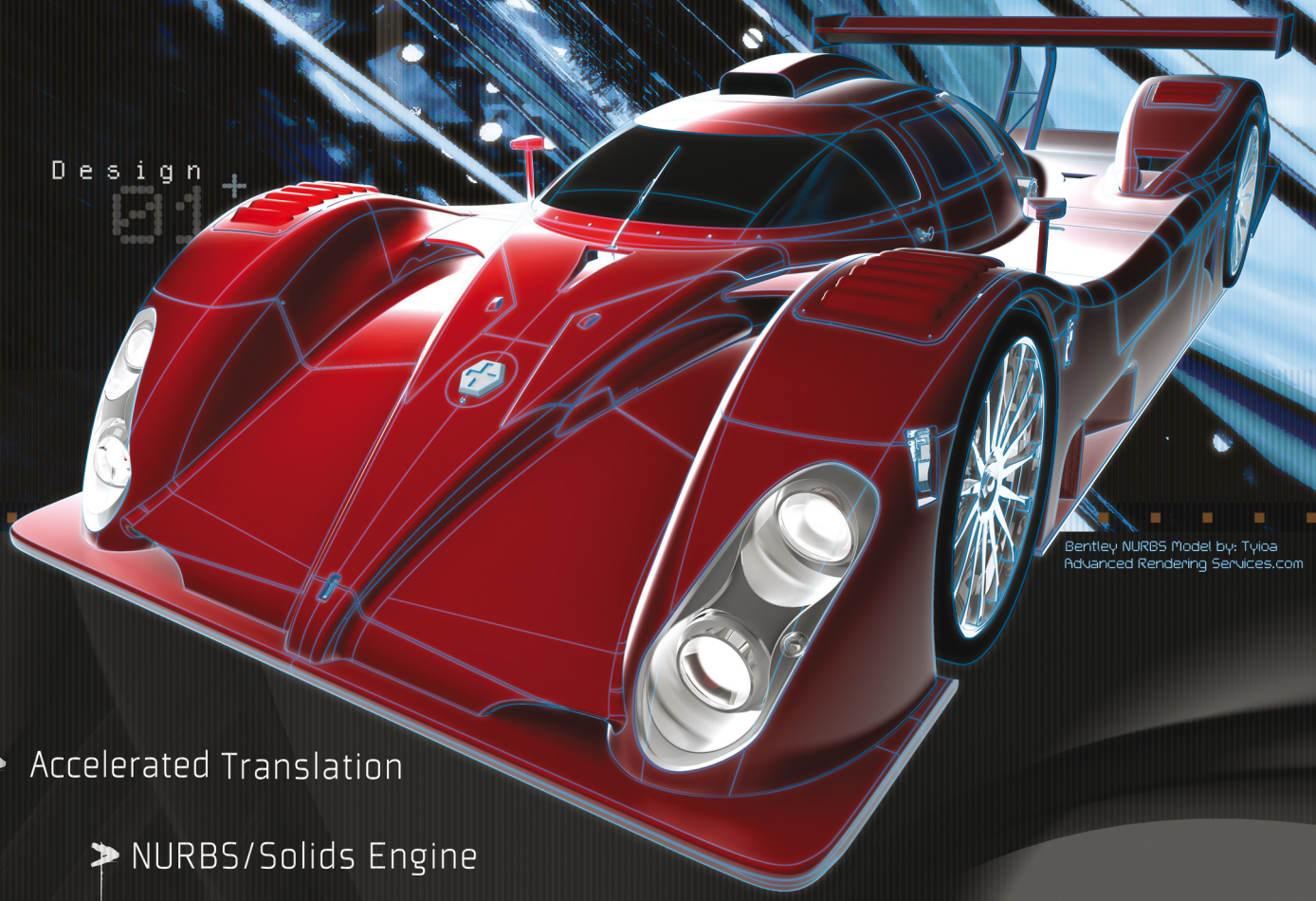
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"When I do a project, I typically do it to learn something and try to end up with something cool all at once."

Using a mixture of 3DS Max, ZBrush and Photoshop, Chris Carter shows us how he went about creating his scene.

making of Voice

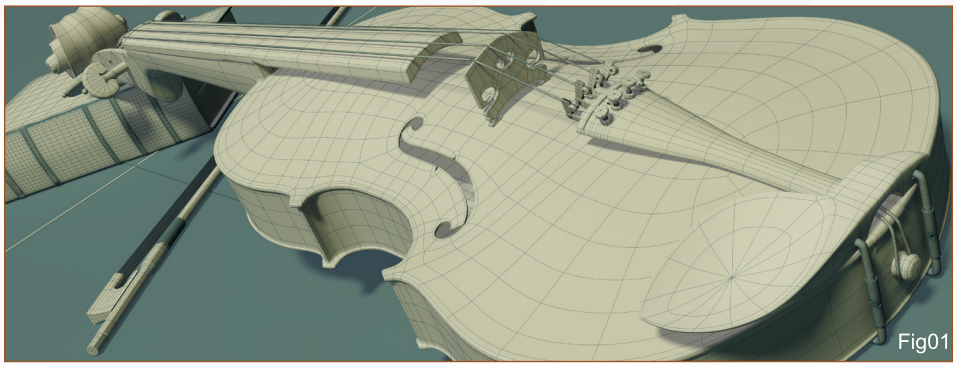
Voice

Created In:

3DS Max, ZBrush and Photoshop

Modelling

The modelling phase was where I spent the most time. I wanted to understand organic modelling, using edge loops and quads and so forth effectively. In the end, I redid the scroll and neck pieces twice, and redid the body of the violin four times. I ended up with the model as it is below. It's still not perfect but I had to know when to let go. My more recent models are done correctly, as I finally understand the edge loop concept pretty well. Something else I came to rely on heavily was the Stack in 3ds Max. This prevented the need to redo UV unwraps for every minor geometry change (mostly) (**Fig01**).


Fig01

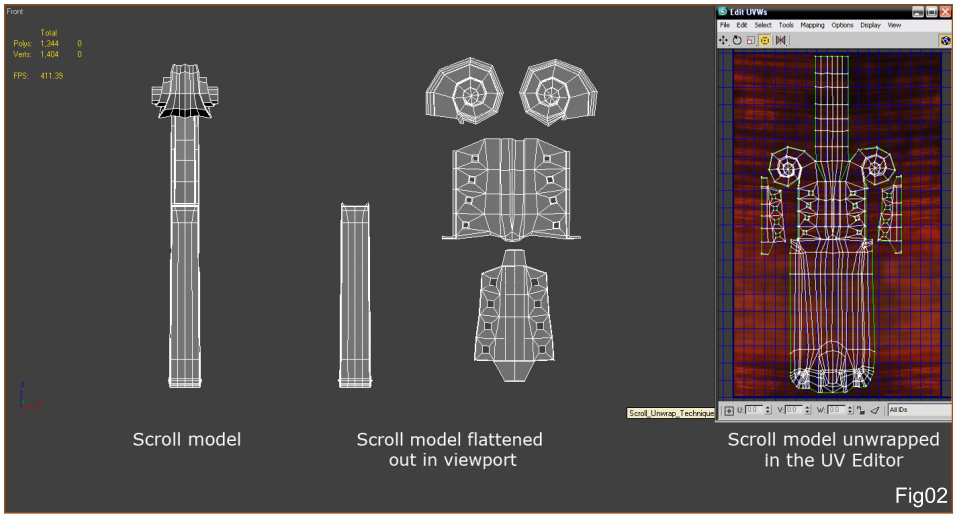


Fig02

Texturing

This was my next biggest hurdle. I wanted a UV unwrap for this, but using 3ds Max's tools alone makes this quite a pain. I ran across a reference to the fact that, as long as what you do to a model does not change the geometry specifics (vertex numbers, poly count, etc.), you can flatten it out in the viewport so that when you unwrap it, it stays together as expected. What I did then was just split a copy

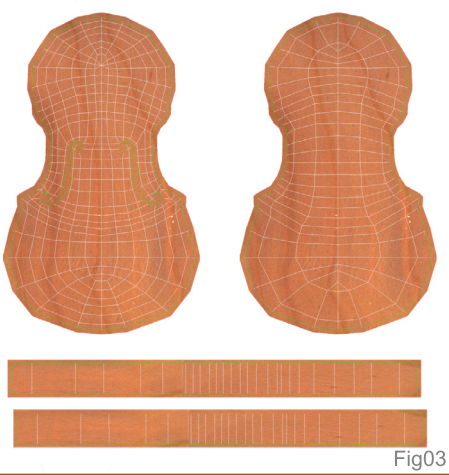

Fig03


Fig04

of the objects into elements and rearranged their geometry to get a flattened version. I unwrapped that and copied the UVs back to the original. Then I just painted all the textures up in Photoshop (**Fig02, Fig03** and **Fig04**).

Props

Clearly the violin is the focus, but the scene needed something else, and I wanted a reason to mess with ZBrush. I modelled up the book and took it to ZBrush to add some detail, texturing it with some maps I made in Photoshop to look like a book I own. I chose Sherlock Holms because he loved the violin, and I love the Holmes stories. As for the floor, it just seemed to fit and using that as the backdrop, my scene finally came together so that it'd look like some Holmes loving violinist had set down her belongings in the corner of a concert hall. The bow was an afterthought. It didn't take long but it gave me a chance to cook up a procedural pearl texture for the inlaid parts. I did the horse hairs with a bunch of splines, and then used a Sub Surface Scattering material. Unfortunately, the depth of field ended up taking away from the details on the bow and on the peg box (**Fig06** and **Fig06**).

Fig05



Fig06

Lighting

I was eager to get into mental ray's GI and Final Gather and I also wanted to make good use of some lighting techniques my friends Jay and Trevor had shown me so that's where I started. Using a simple three point lighting setup, I brought the brightness way down, leaving the multiplier at 1.0. Then I let the bulk of the light come from the Final Gather and the GI. This seemed to be a good way to keep the level of glare on the surfaces down, but still keep it believable.

I did several lighting tests using material override so I could get a better sense of the geometry without the distractions of the textures (**Fig07, Fig08, Fig09** and **Fig10**).

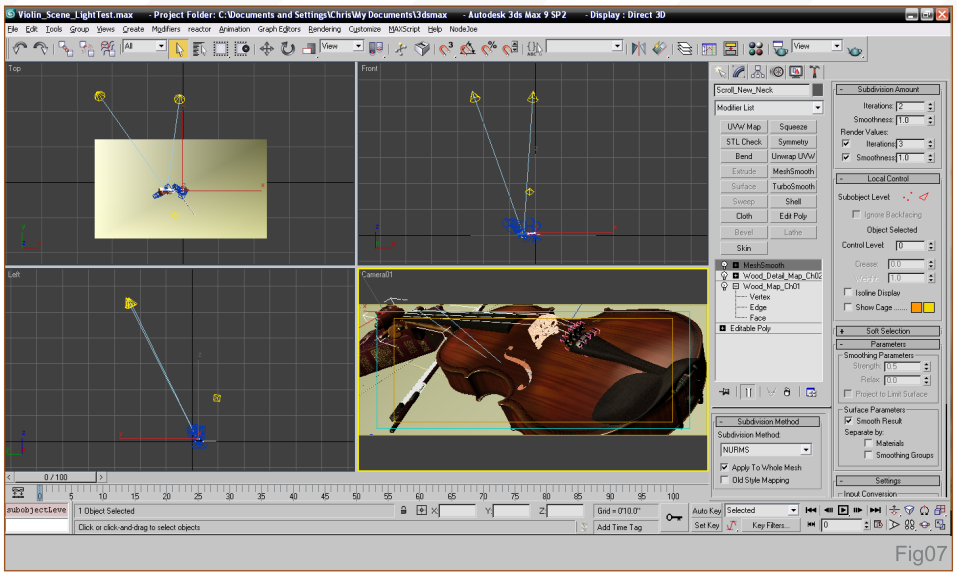
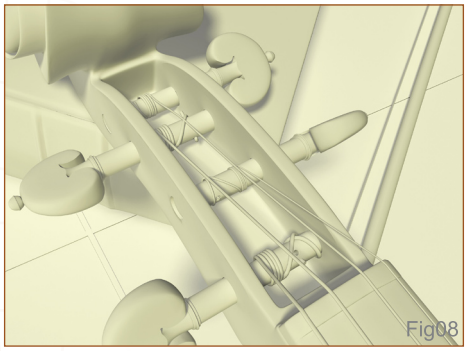


Fig07

Rendering

At the time I did this, I couldn't get 3ds Max to render scenes of the size I wanted, 4096x1536, even though my hardware was capable. What I ended up doing was rendering it in three pieces and putting those together with Photoshop.


Fig08

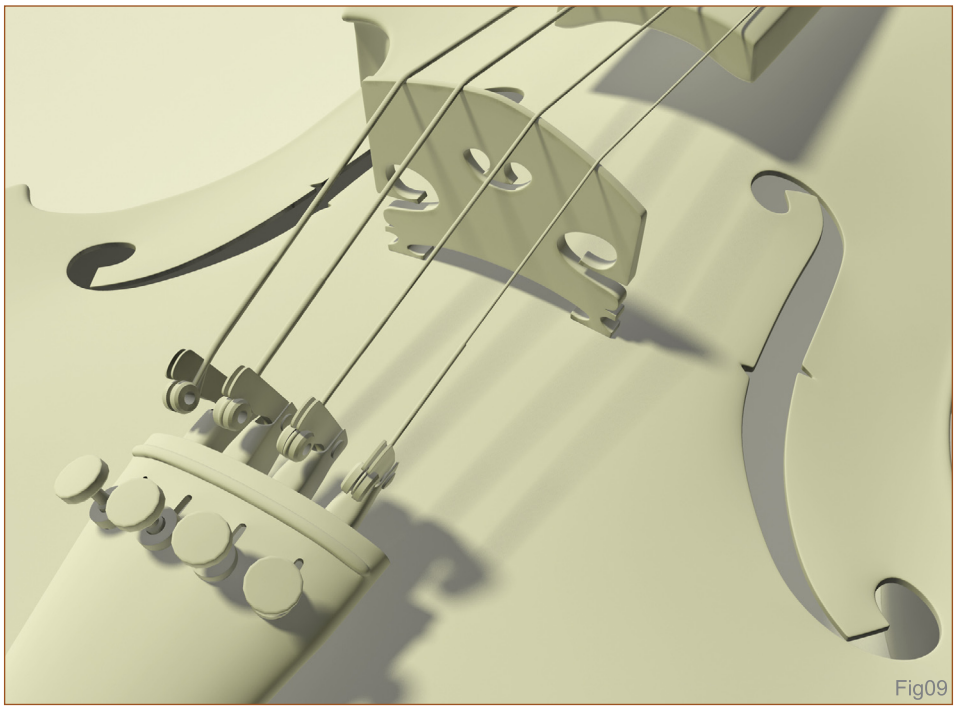

Fig09


Fig10

Any time I needed to render a correction, I just rendered a region and placed it into the final, again in Photoshop. The render time for each of the thirds was around 1.5 hrs.



Post Production

I had recently read some articles about the value of post and decided that instead of trying to render the perfect image, it'd be faster to just use a little Photoshop. It worked quite well too. I did some corrections, like tweaking out artefacts and adjusting the light in the f-holes. The GI had given a good effect everywhere else but made it way to bright inside the violin as seen through the f-holes. I also added some whips of fuzz to the thread around the ends of the strings and finally put in some depth of field by simply copying the layer, blurring the copy, and then using a layer mask. It's not accurate, but it works (**Fig11**).



Chris Carter

For more from this artist contact:
cg.carter@comcast.net

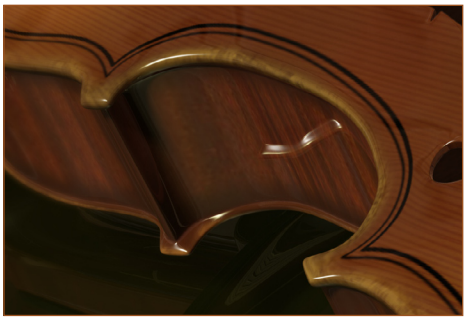




Fig11


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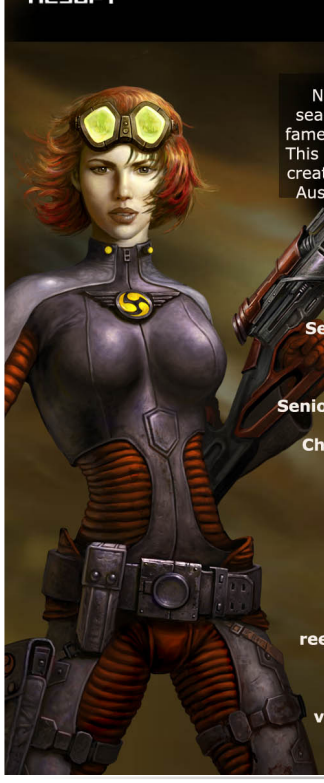
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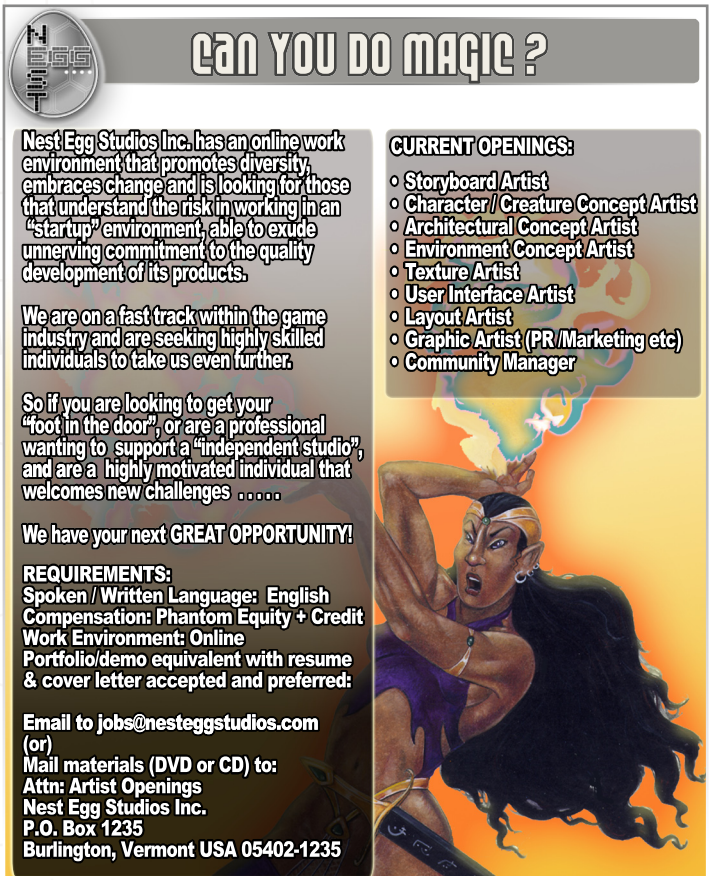
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3DC

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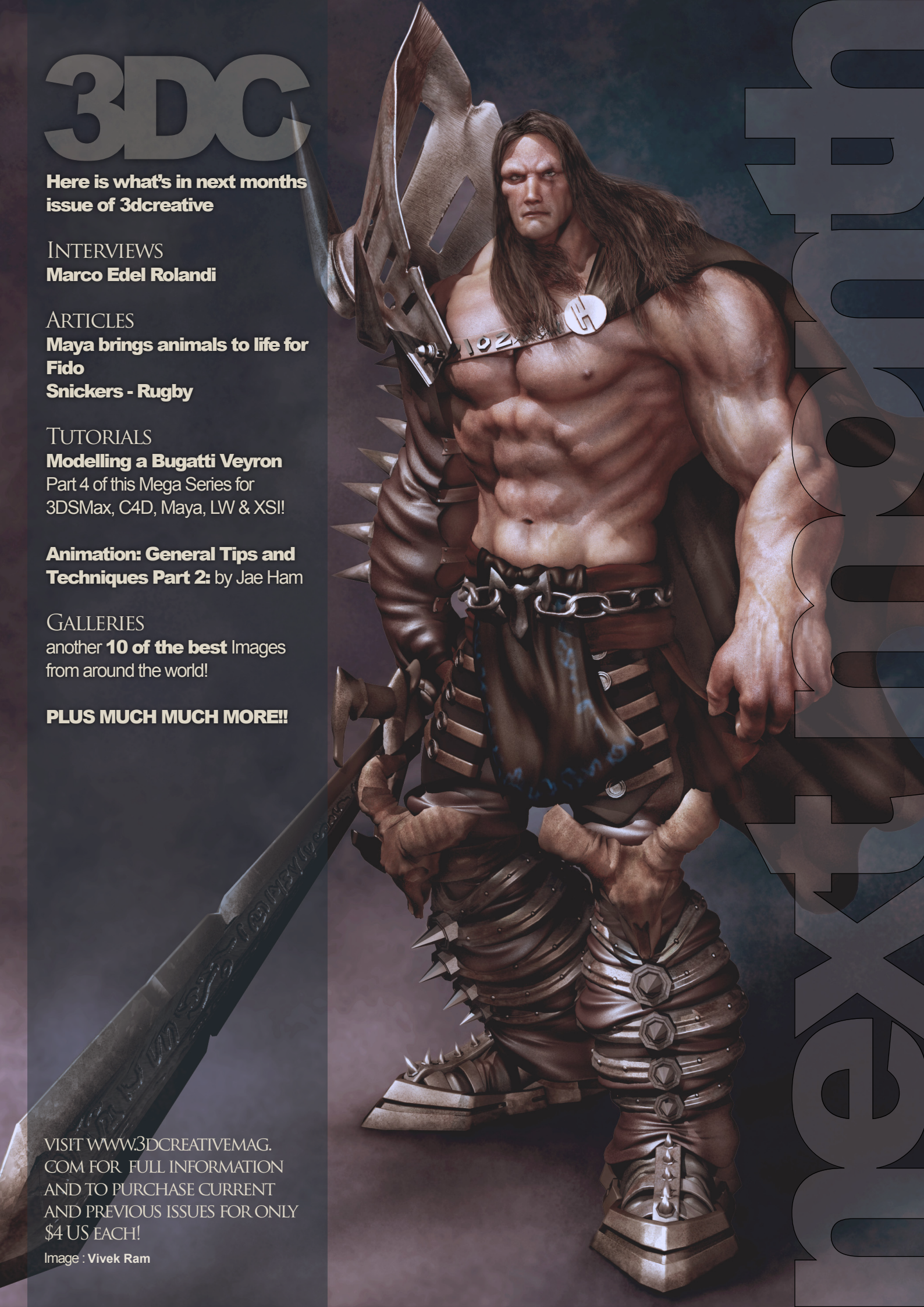
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Tutorials
Modelling a Bugatti Veyron
Part 4 of this Mega Series for 3DSMax, C4D, Maya, LW & XSI!

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Bugatti Veyron
car modelling series

3ds max

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This series aims to offer a comprehensive guide for creating a finished car to people who are new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but they do endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
MODELLING THE CHASSIS - BASICS

Issue 031 March 2008
MODELLING THE CHASSIS - DETAILS

Issue 031 March 2008
LIGHTS, RADIATOR GRILL & VENTS

Issue 032 April 2008
WHEELS, TYRES & RIMS

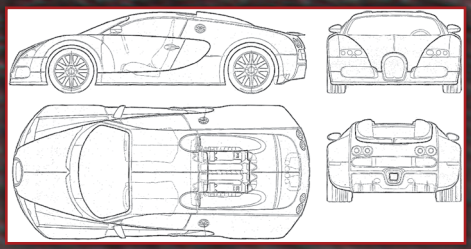
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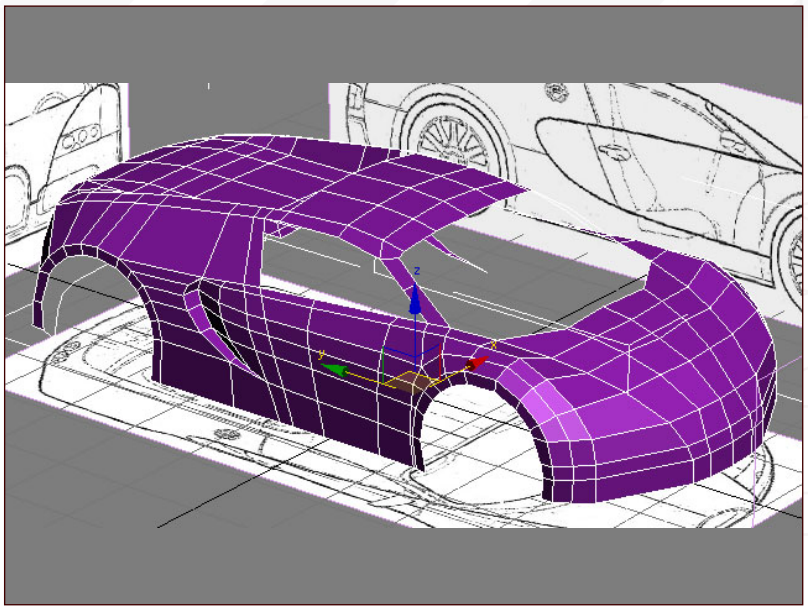
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BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

Ok now we will be working with the basic mesh we finished in the last tutorial. We will be adding all the details and edge loops necessary to have the mesh accurately represent the form of the car after which we will add a meshsmooth modifier.

We can now start modelling now and I will try my best to explain what we are doing.
We will begin with the mesh we finished with in the previous part (**Fig01**).

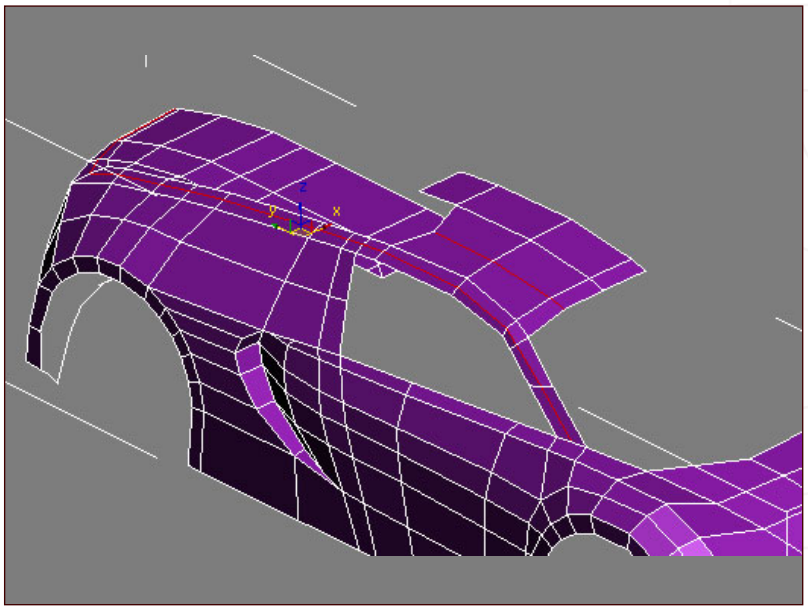
Fig 01



When I modelled this I always had the blueprints visible but just to make the screenshots easier to follow I have hidden them.

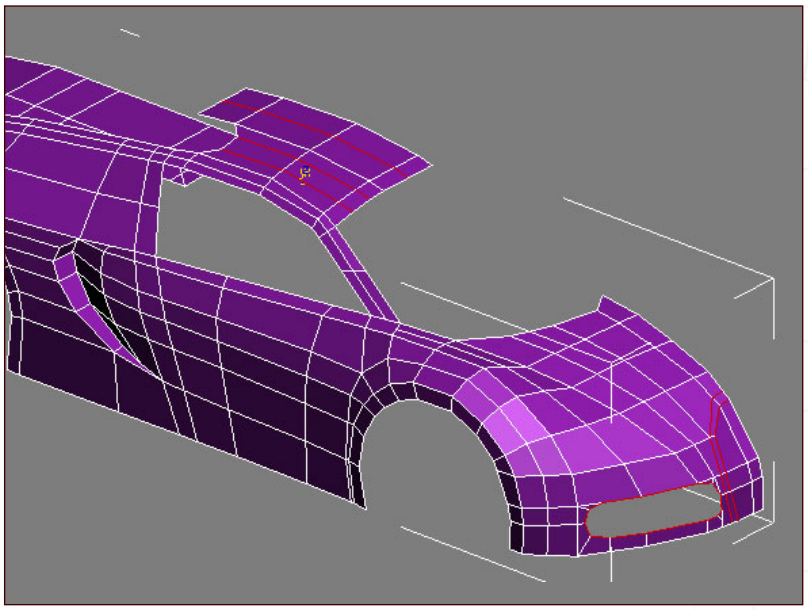
I added these edges (**Fig02**).

Fig 02



Cut in the air intake in the front and delete the faces (**Fig03**).

Fig 03



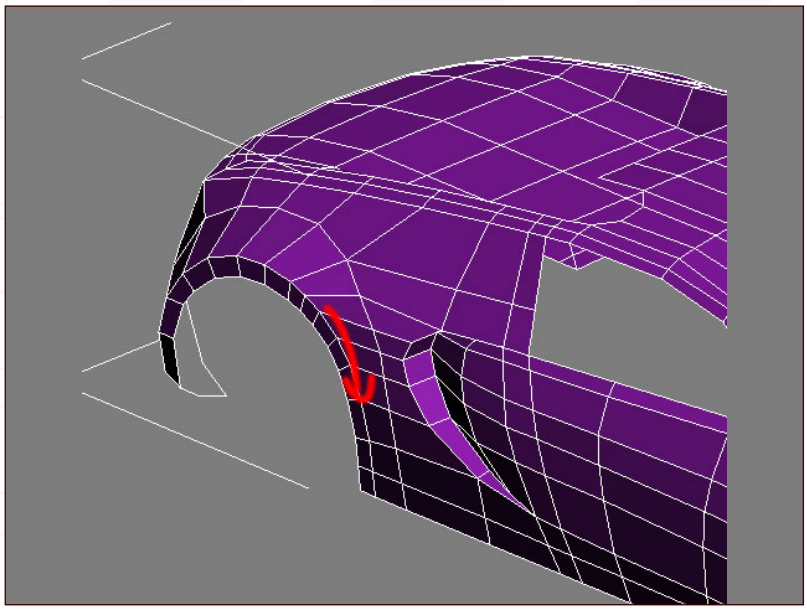


Fig 04

Cut another edge loop to change the flow (**Fig04**).

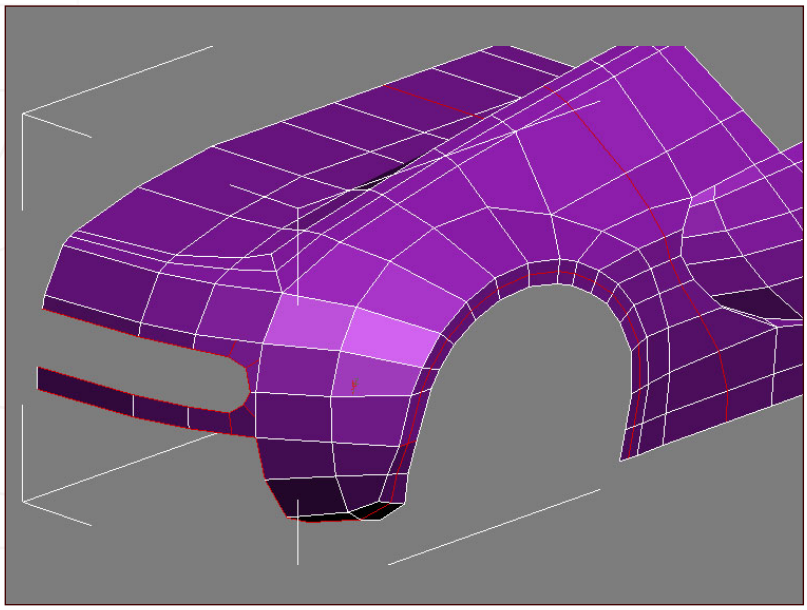


Fig 05

Delete the lower polygons in the back and cut in the gap shown in the figure (**Fig05**).

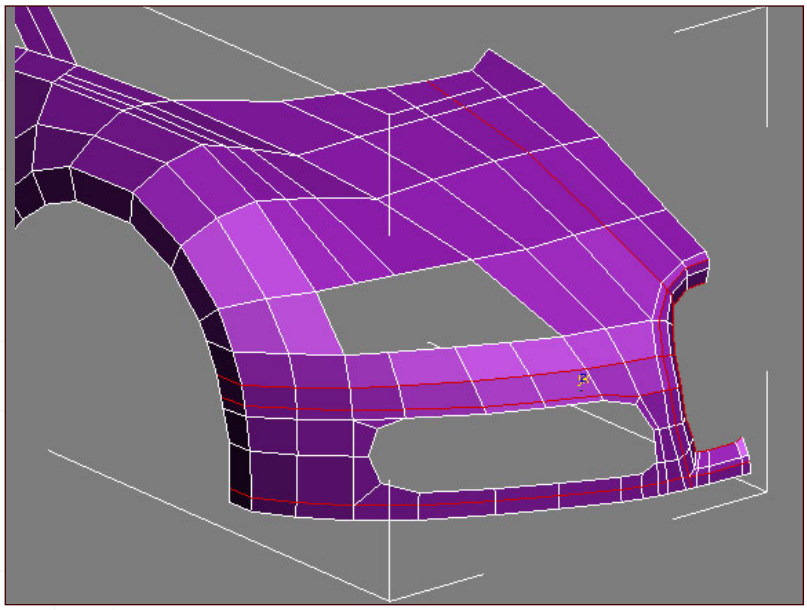
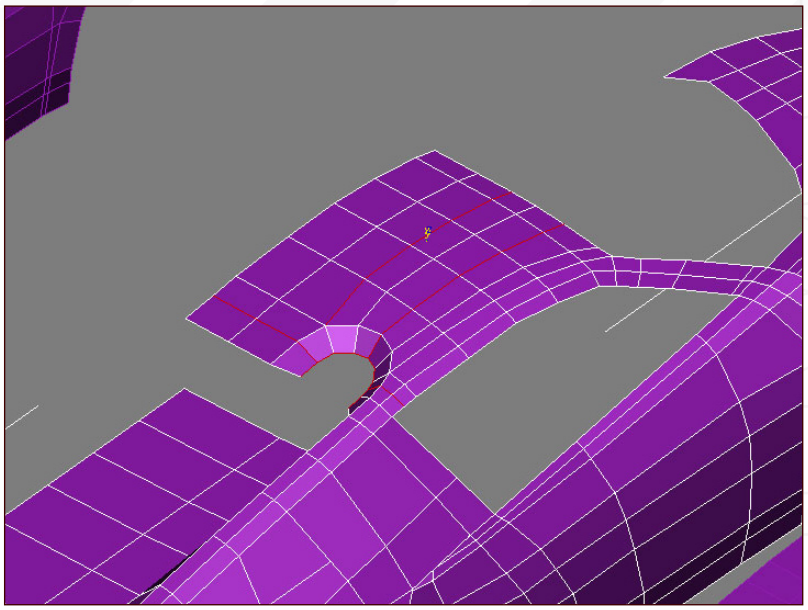


Fig 06

Add an edge loop around the grille then extrude it inside and delete the faces (**Fig06**).

Same thing with the roof, add the edges and extrude in the gap (**Fig07**).

Fig 07



Add more edges and extrude the front air intake making sure that after you extrude anything to correct the position of the newly created vertices so that it becomes easy to add detail later without having to fix anything (**Fig08** and **Fig09**).

Fig 08

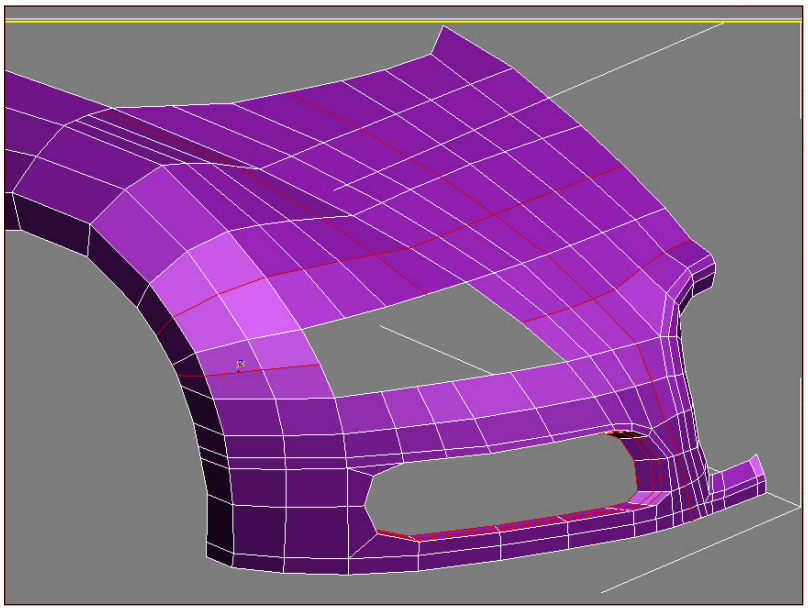
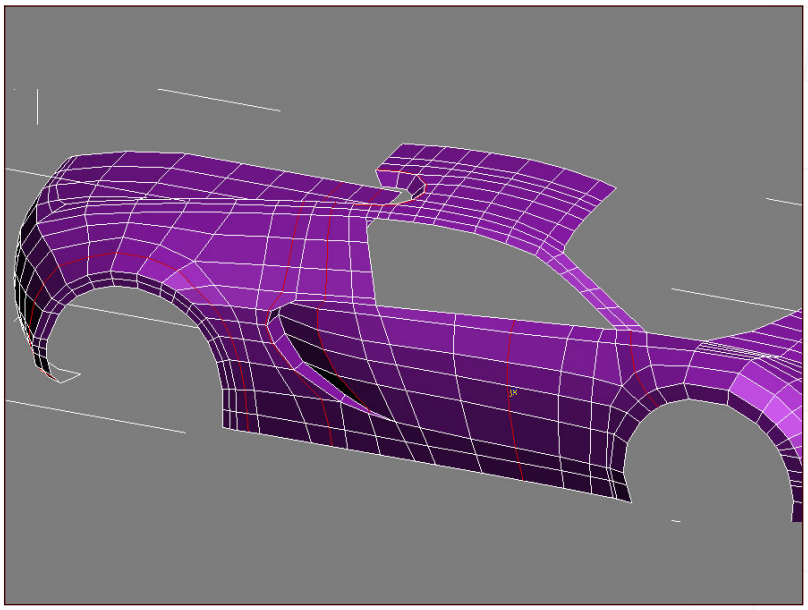


Fig 09



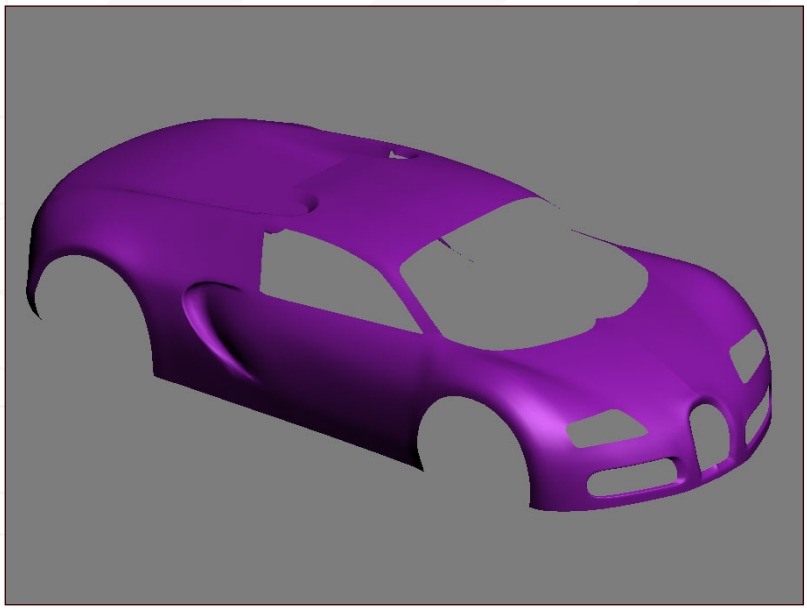


Fig 10

Before adding more and more details it might be a good idea to take a look at what you have done so far and maybe add a quick meshsmooth modifier. It's ok to go back and fix stuff; I always keep looking at the model and make tiny changes the whole time. As you can now see the 3d model still has some creases around the front wheel area, side air intake and in other places but it's due to the fact that we haven't finished refining the topology. Overall it looks to be going in the right direction (or to be more accurate I hope its going in the right direction !) (**Fig10**).

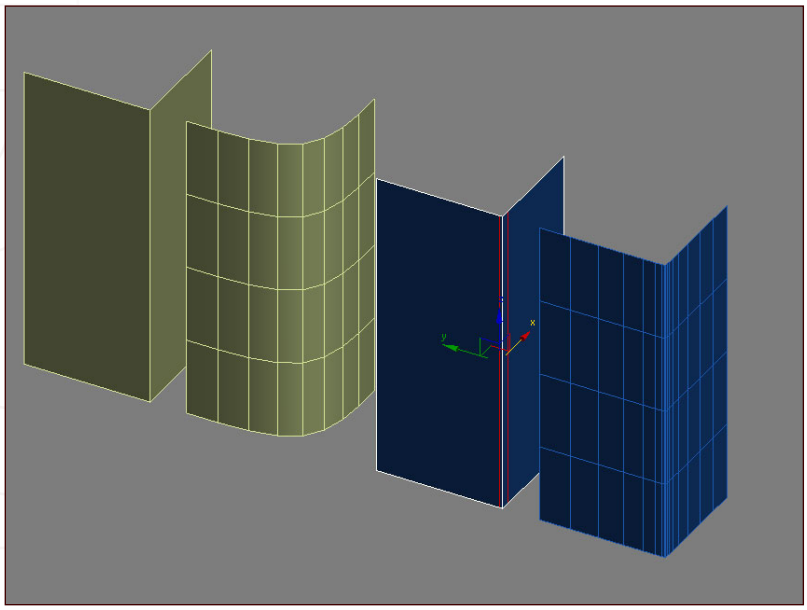


Fig 11

Making edges which are sharp but not razor sharp as we can observe in most surfaces is very easy. You need to simply add an edge loop, no need for anything fancy, as you can see here just adding 2 edges made the curved corner sharp (**Fig11**).

You can try to experiment more with the effect of adding edge loops to make creases.

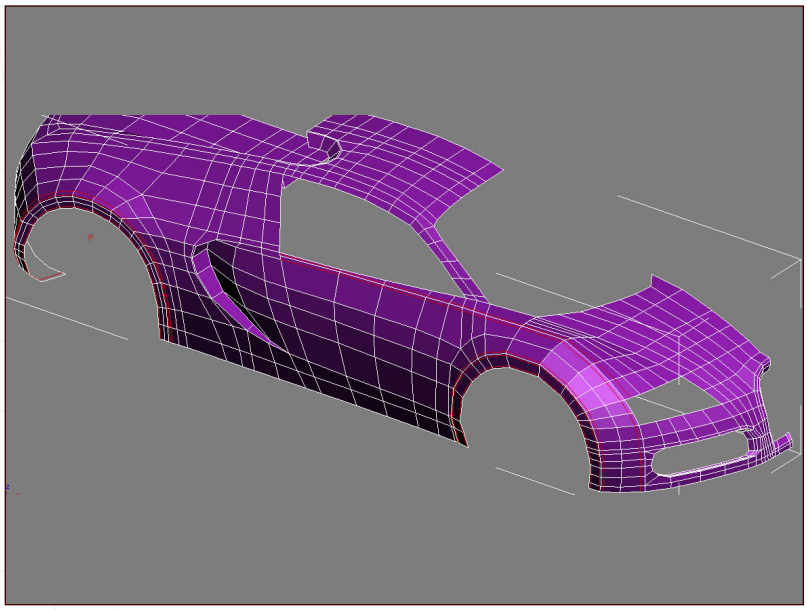


Fig 12

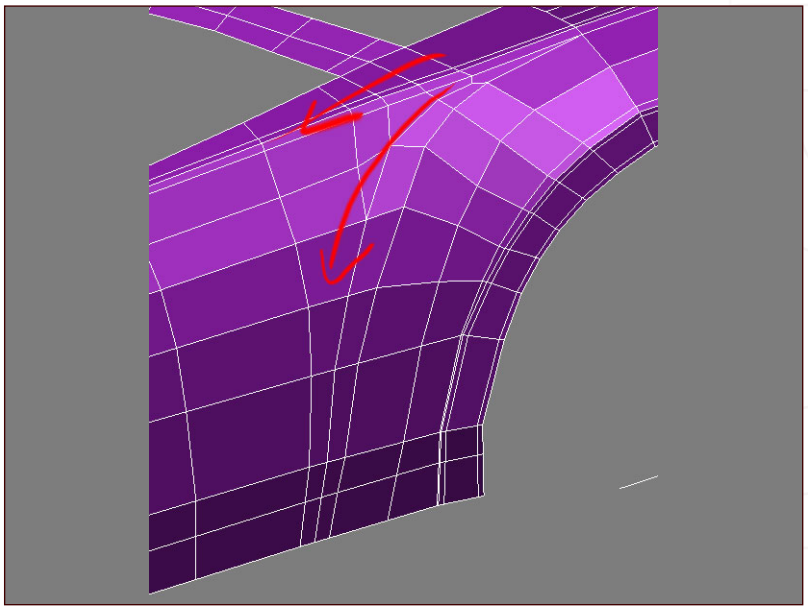
I've added more edge loops around the wheel gaps and body line to have our model follow the same curvature we see in the reference image (**Fig12** and **Fig13**).

Fig 13



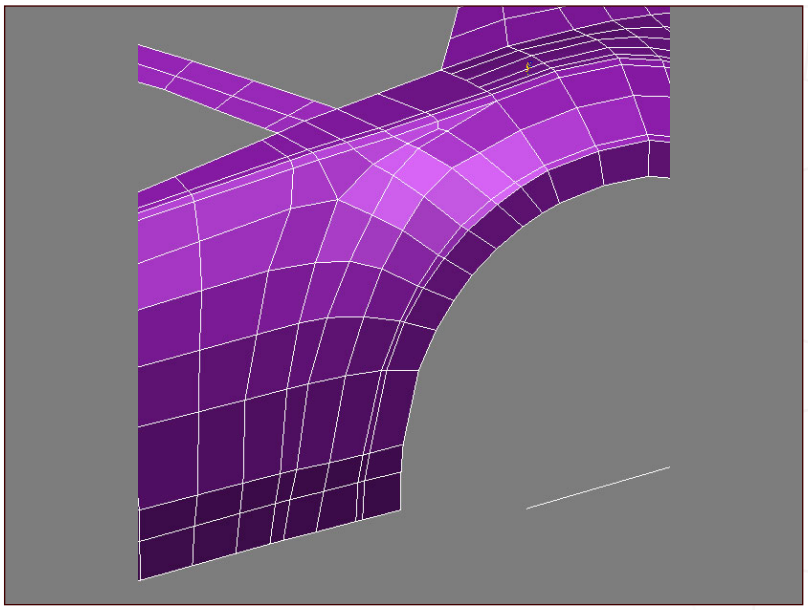
The topology around the area you see in the image gave a strange result when applying meshsmooth so I've tried to change it and derive it differently (**Fig14**).

Fig 14



To fix the tri I just added another edge loop and moved the vertices to have a better flow (**Fig15**).

Fig 15



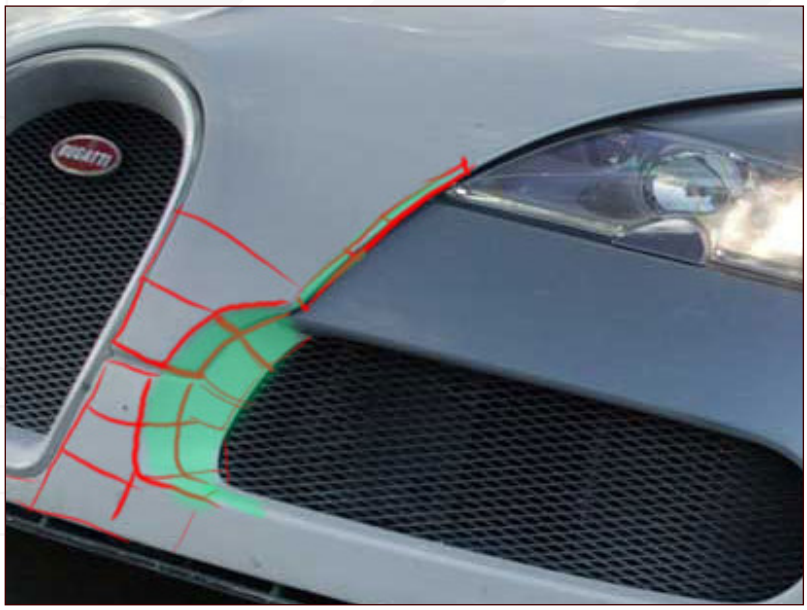


Fig 16

Now making the hood needs a bit of attention, the actual form of it is very simple but it can be confusing if you didn't take enough time to look at the reference image (**Fig16**).

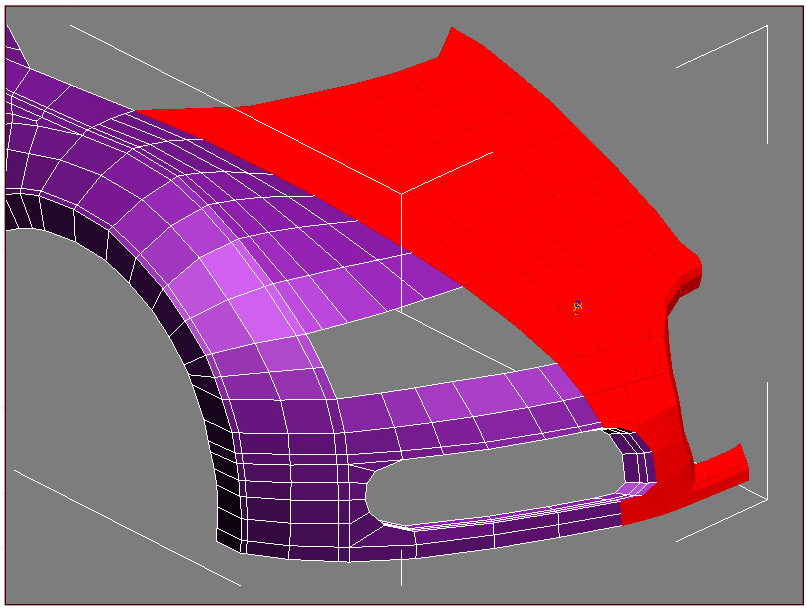


Fig 17

I've just done a very quick drawing on top of it in Photoshop to make it easier to read. It appears that the hood is extruded out a bit and that the air intake was cut after the extrusion, since we have already made the cut into the air intake we can just then extrude those faces and get the same form (**Fig17**).

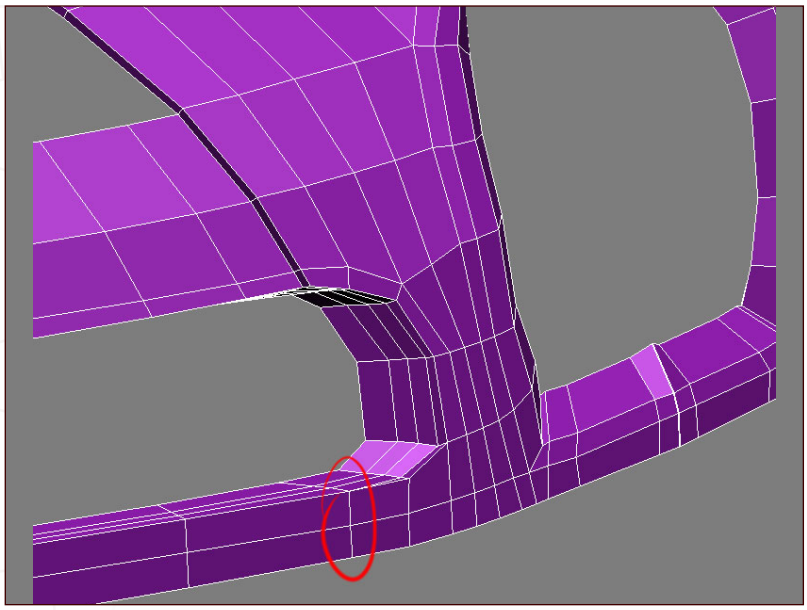
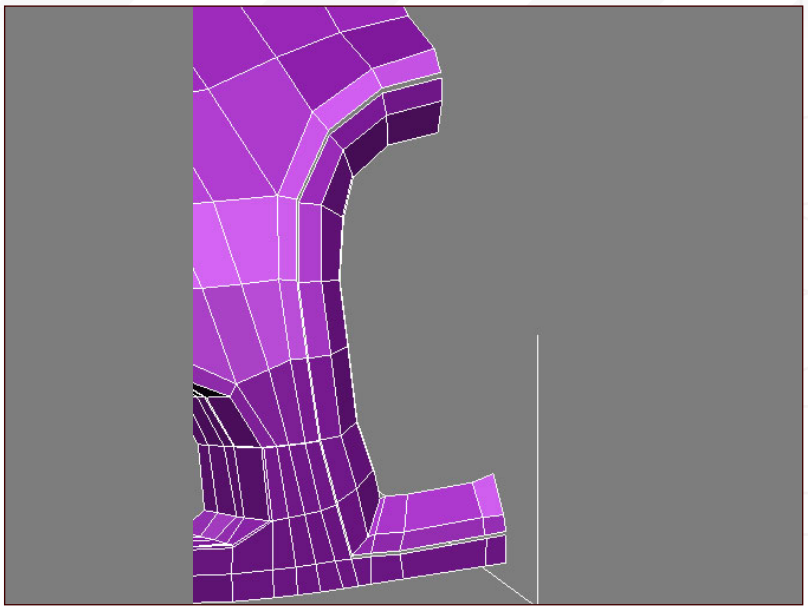


Fig 18

Merge the vertices in the red circle to get that shape and not have an extruded edge since in the reference image that part is smooth. You will have a tri as a result but you can easily fix it later (**Fig18**).

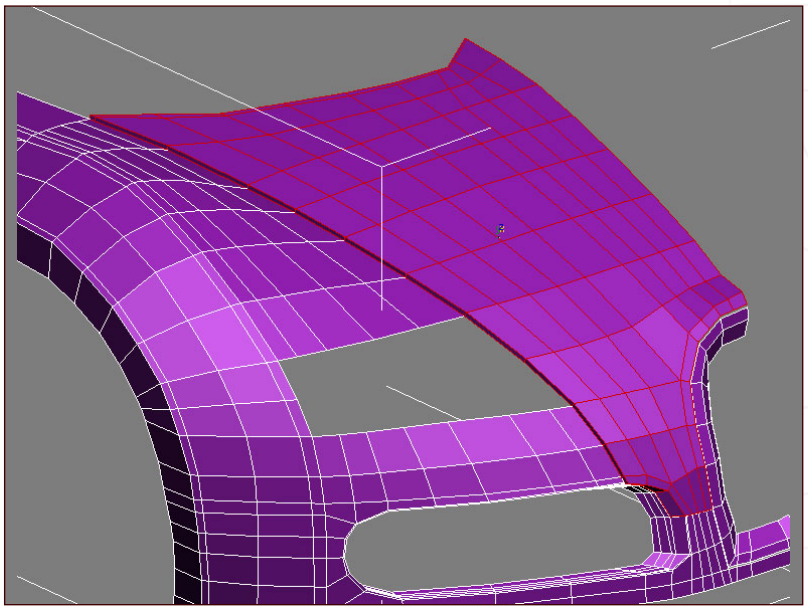
Detach the grille frame (**Fig19**).

Fig 19



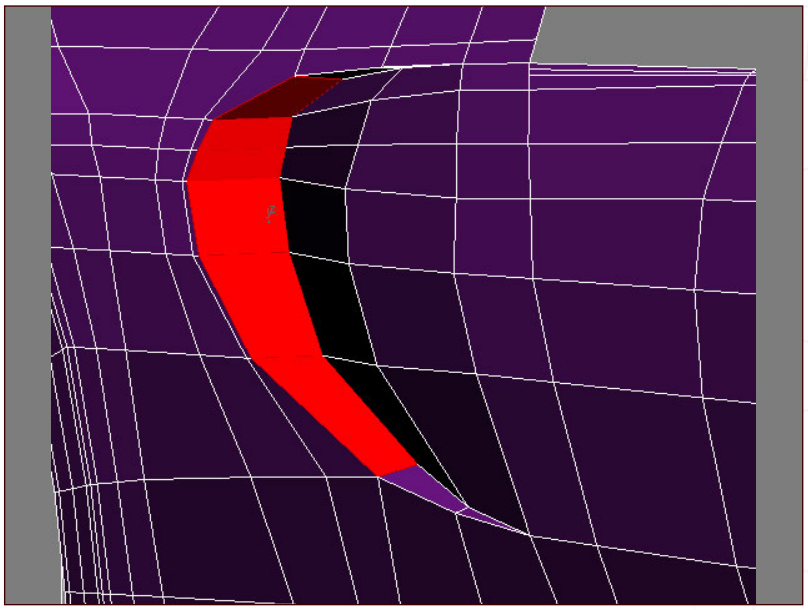
Detach the hood faces and add a couple more edge loops to the hood (**Fig20**).

Fig 20



Delete the faces of the side air intake and take the vertices of the door inside a bit (**Fig21** and **Fig22**).

Fig 21



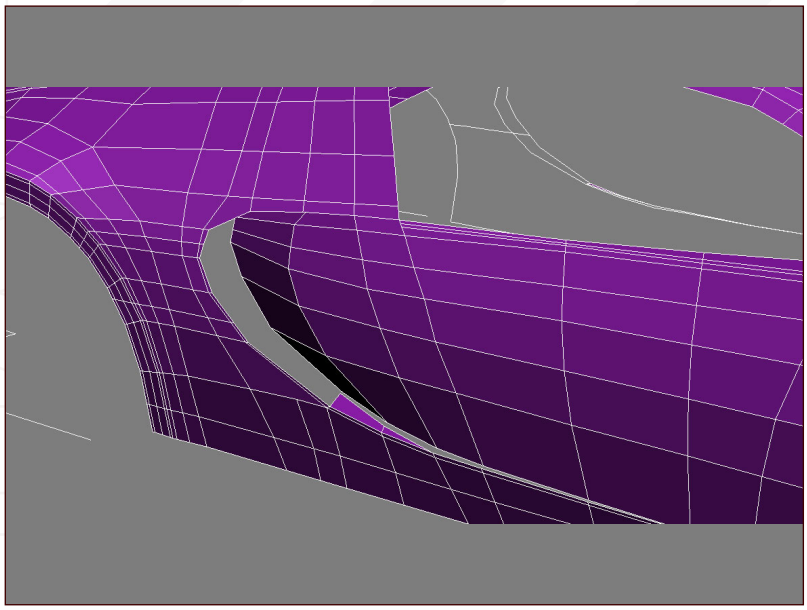


Fig 22

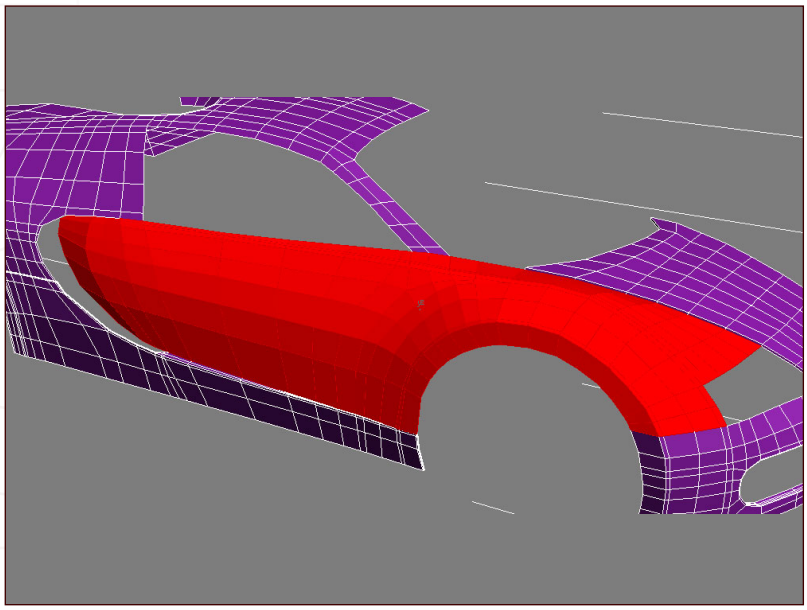


Fig 23

Detach the side body panel faces and lower side skirt and extrude the edges on the lower piece and move the vertices on that area just as in the image (you can look at the reference images to see that the real car has similar topology). Add an edge loop so that when you add a meshsmooth the chamfered edge looks sharp (**Fig23, Fig24, Fig25, Fig26, Fig27** and **Fig28**).

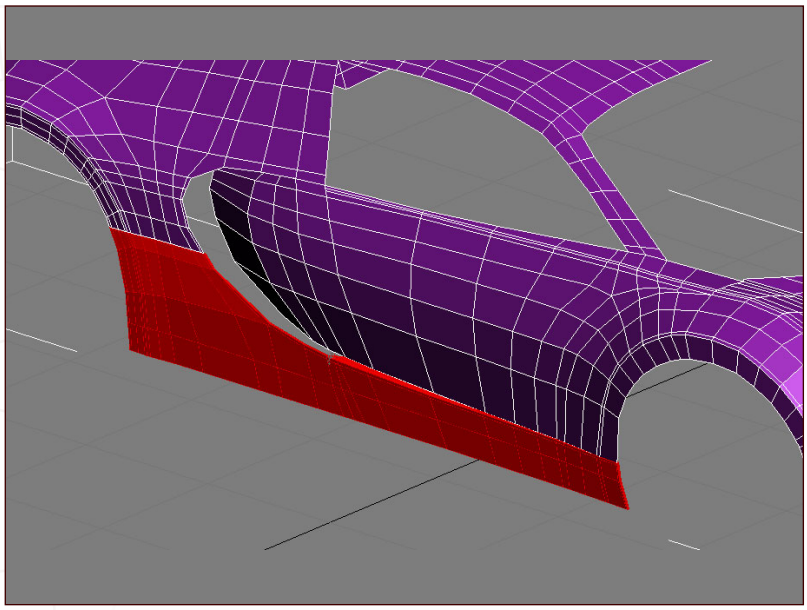


Fig 24

Fig 25

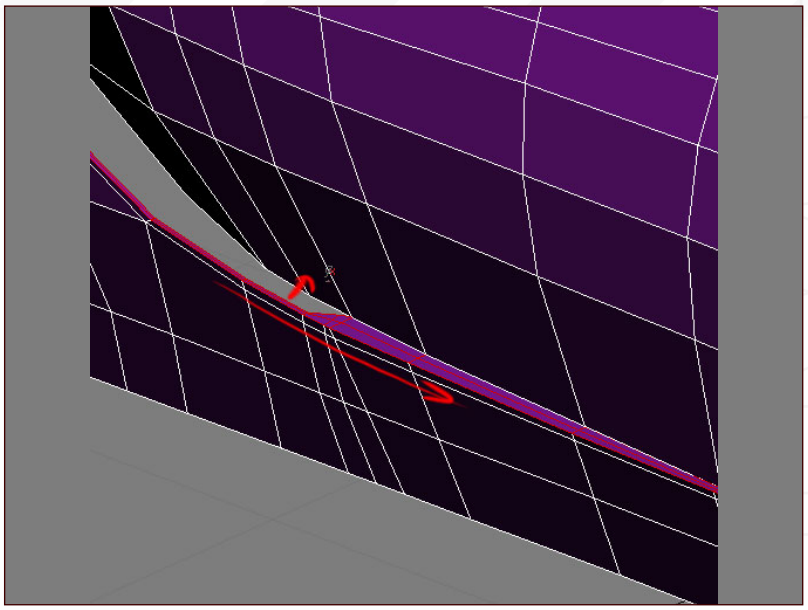


Fig 26

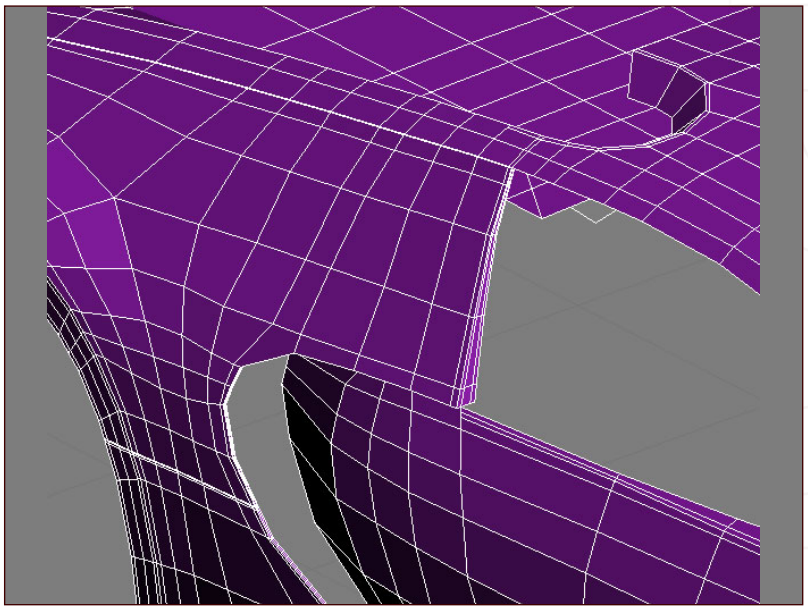
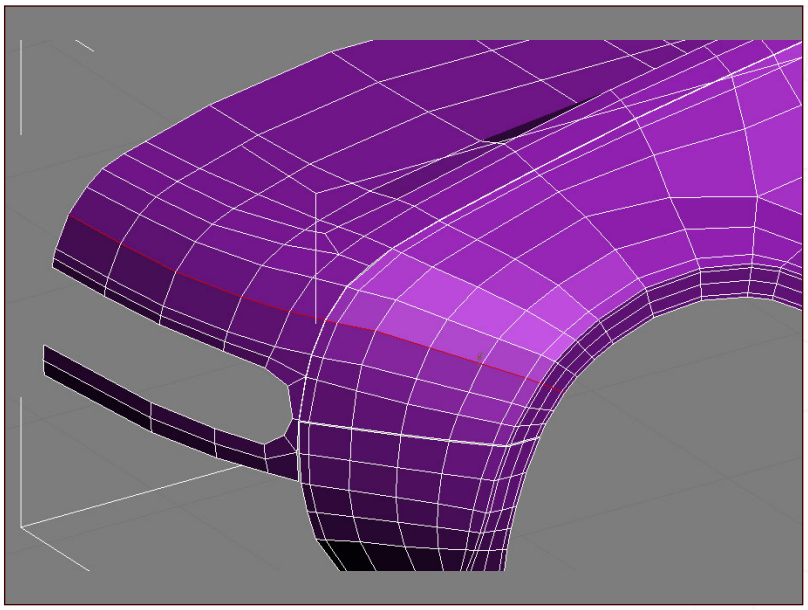


Fig 27



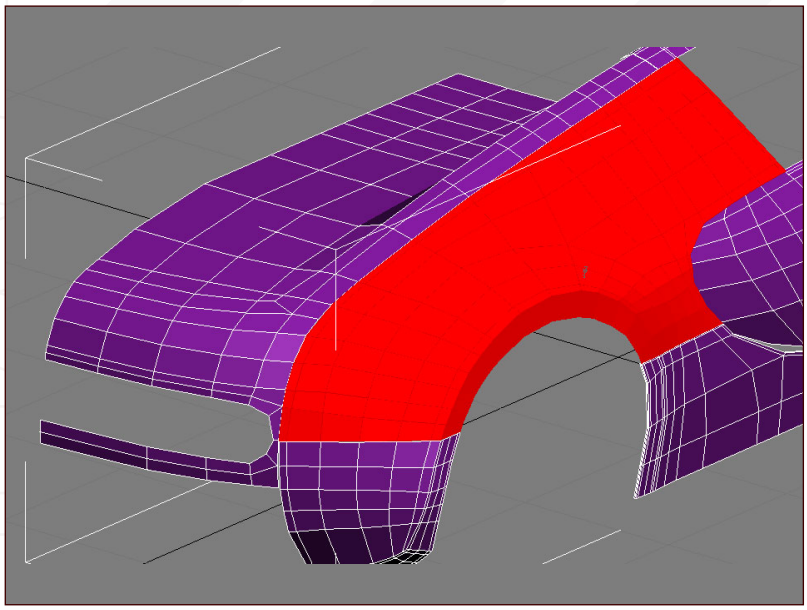


Fig 28

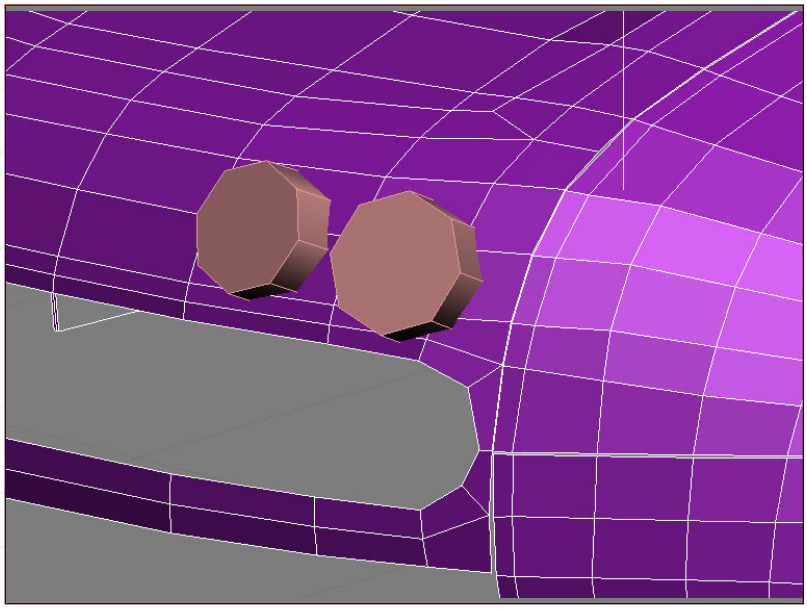


Fig 29

Now to make the back lights, to get that circular shape cut I usually use a quick reference object as a cylinder. Create an 8 sided cylinder and then make the cuts on the car body and try to make the edge loops correct (**Fig29, Fig30, Fig31** and **Fig32**).

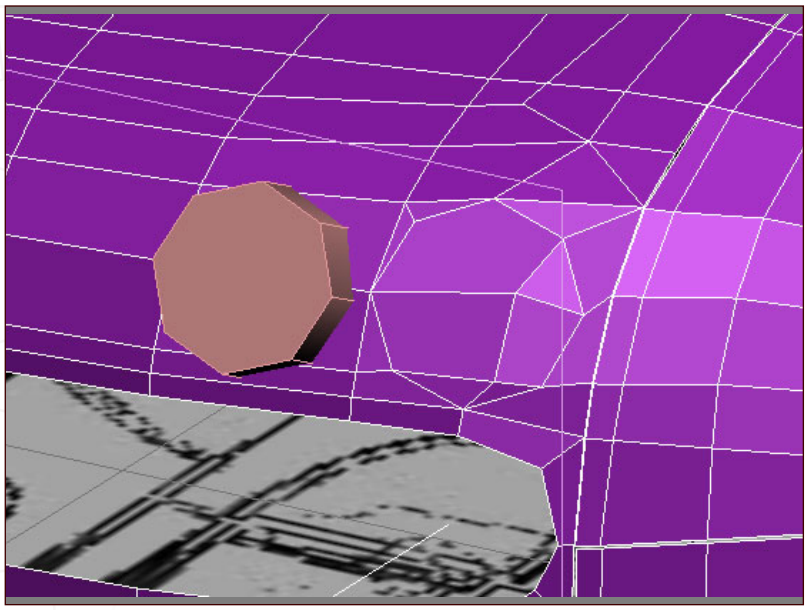


Fig 30

Fig 31

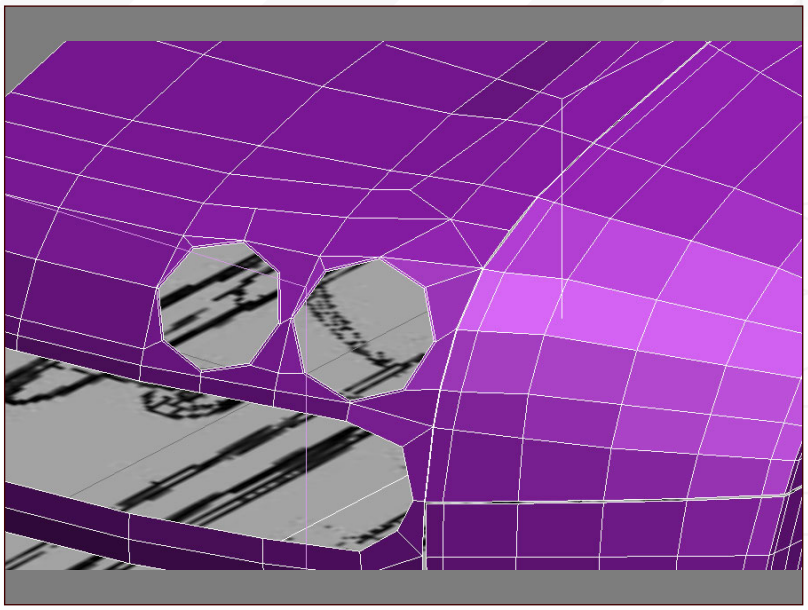
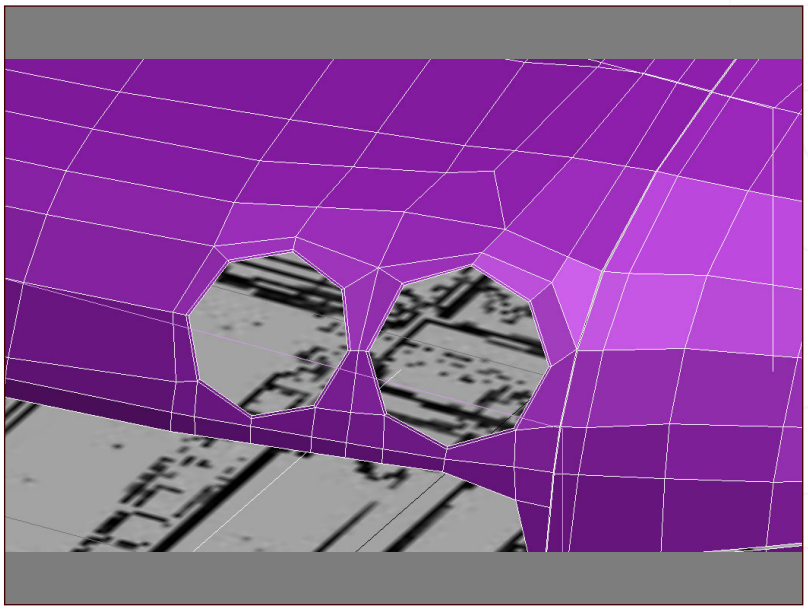
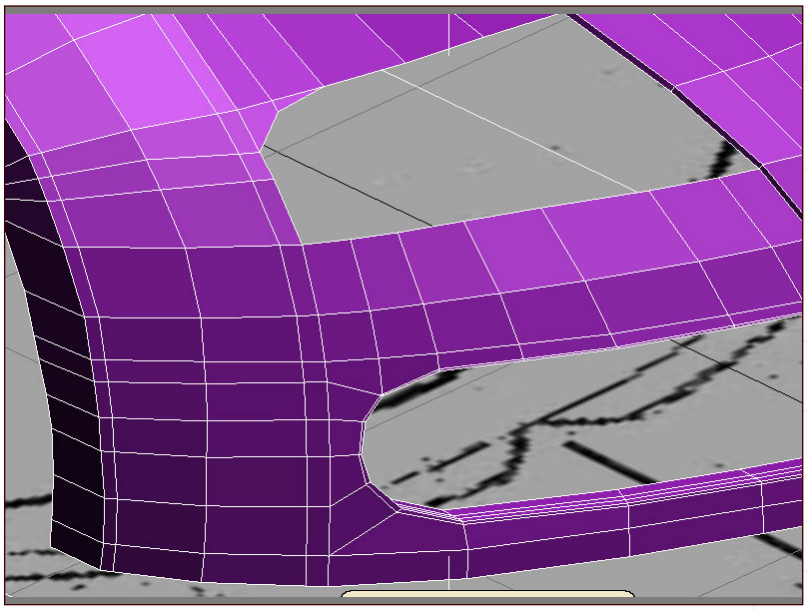


Fig 32



Back to the front light (**Fig33** and **Fig34**).

Fig 33



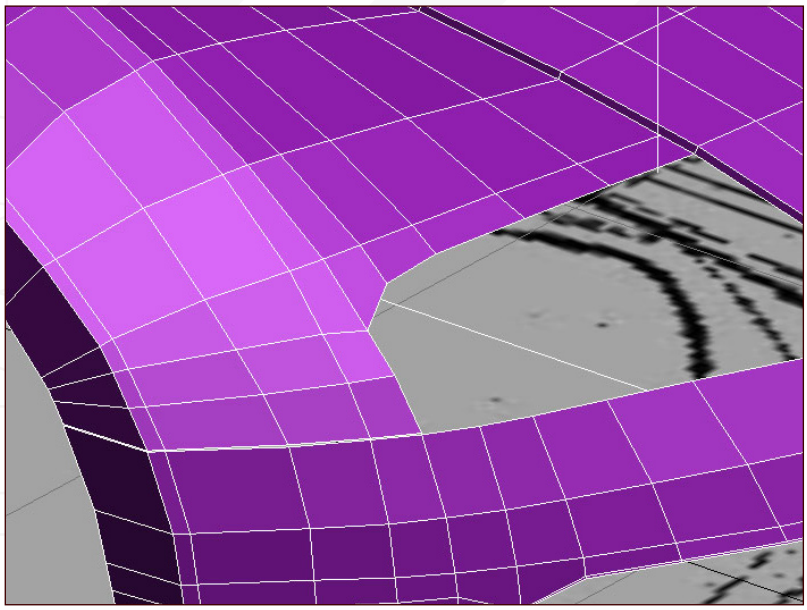


Fig 34

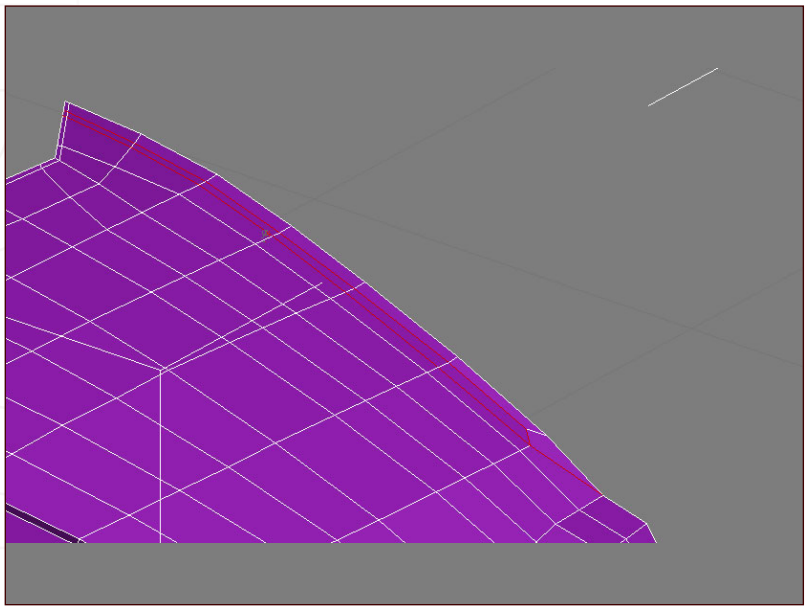


Fig 35

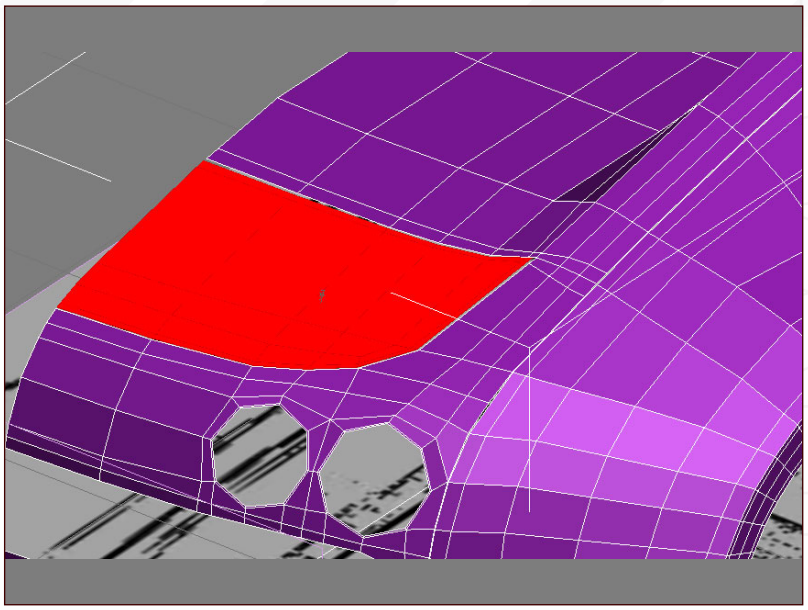
On the hood I added couple of edges to get that crease that you can see in the reference images (**Fig35** and **Fig36**).



Fig 36

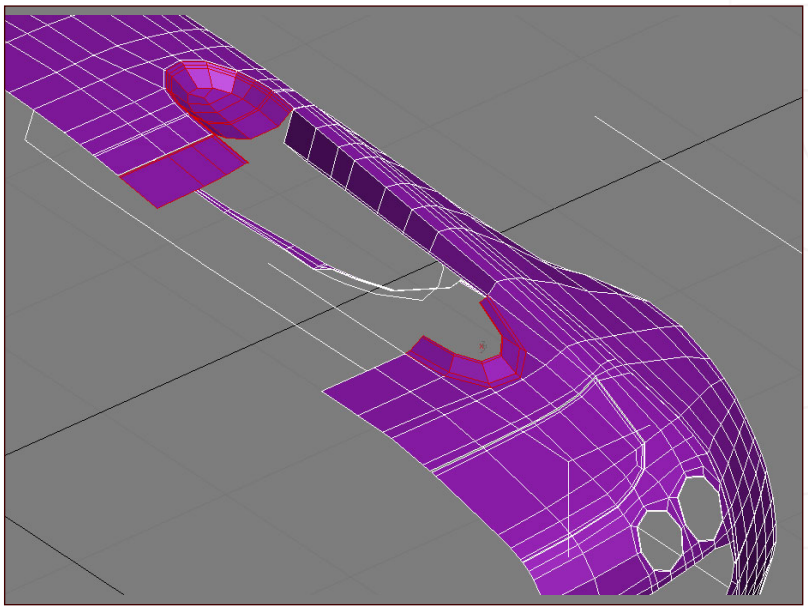
Detach the back aerofoil (**Fig37**).

Fig 37



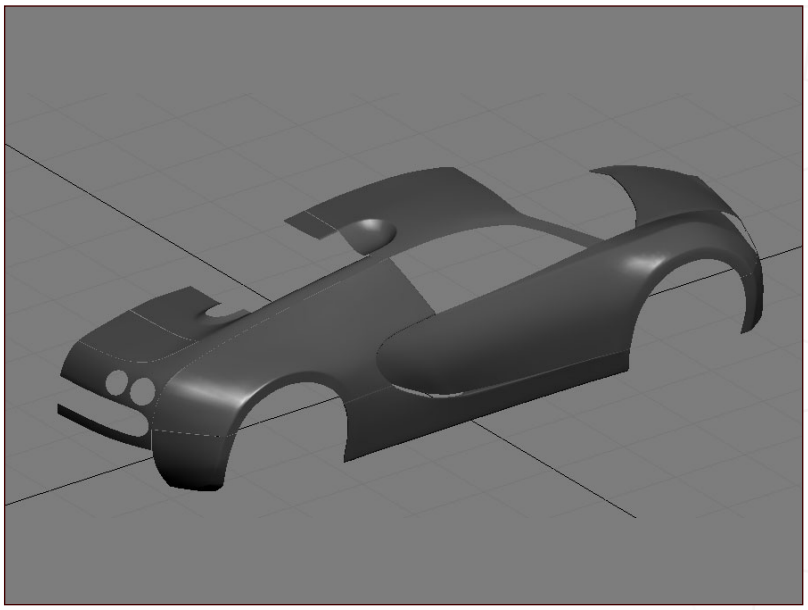
For the back part I deleted the faces where the engine will be and extruded some edges to create what you see in the next image (**Fig38**).

Fig 38



This is how it looks like so far after adding meshsmooth (**Fig39**).

Fig 39



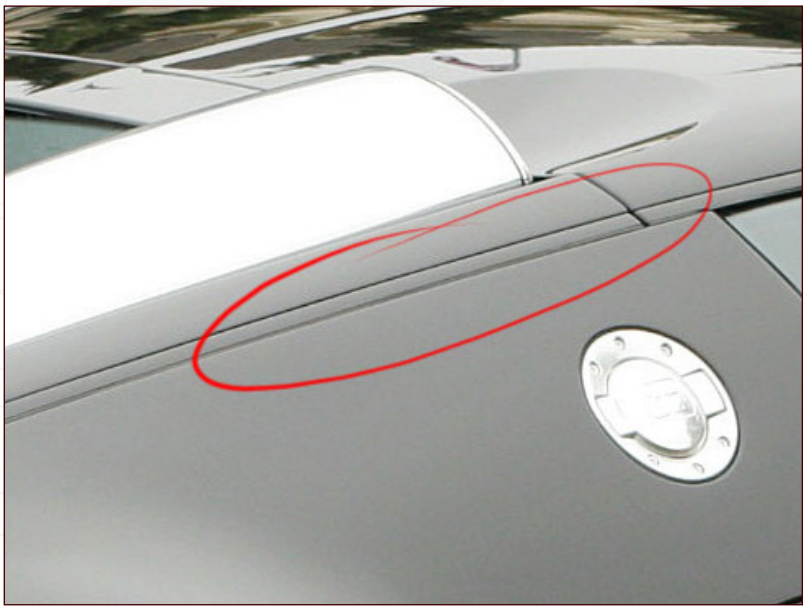


Fig 40

I assigned a material to the model so that we can see it better and catch anything that doesn't look right. It's just a default material with a specular and a glossiness level of 80 but feel free to use any material that displays the model better (**Fig40**).

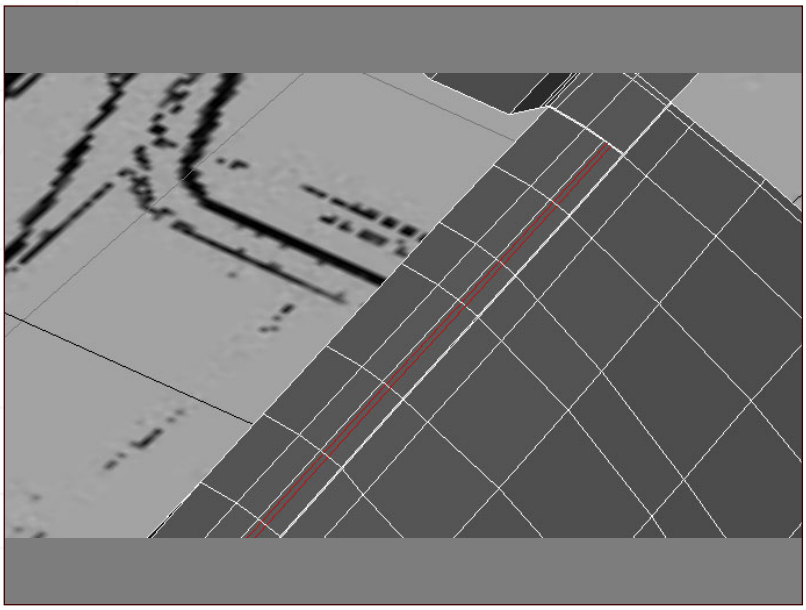


Fig 41

To make this line I simply added an edge then chamfered it twice then picked the loop of the polygons in the middle and extruded them inside (**Fig41** and **Fig42**).

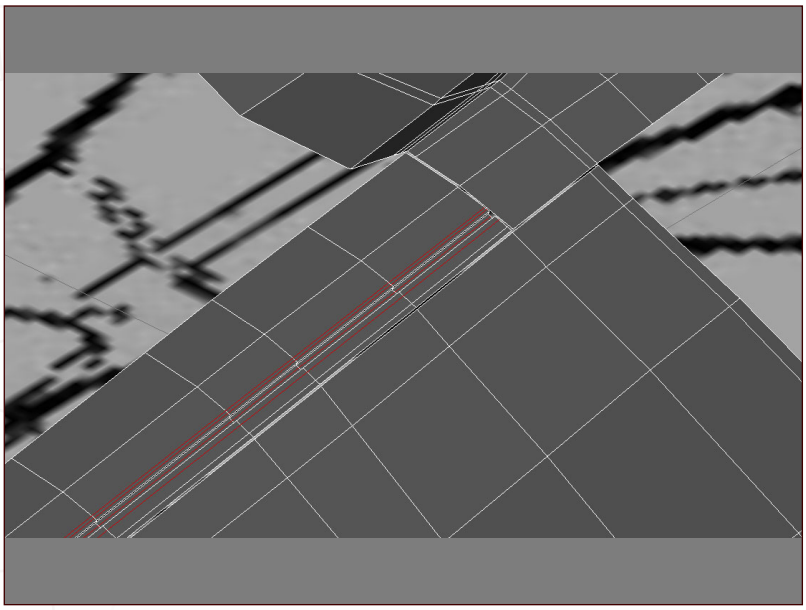


Fig 42

Made a quick topology in the back (**Fig43** and **Fig44**).

Fig 43

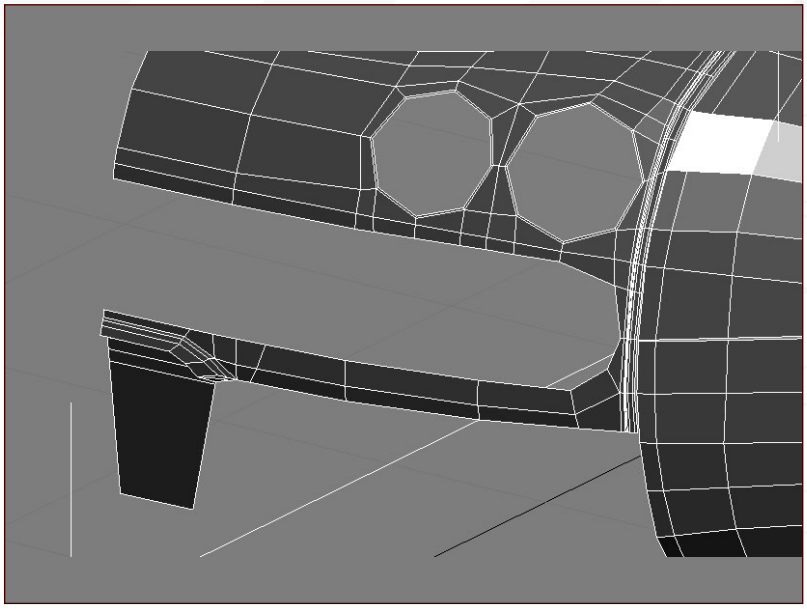
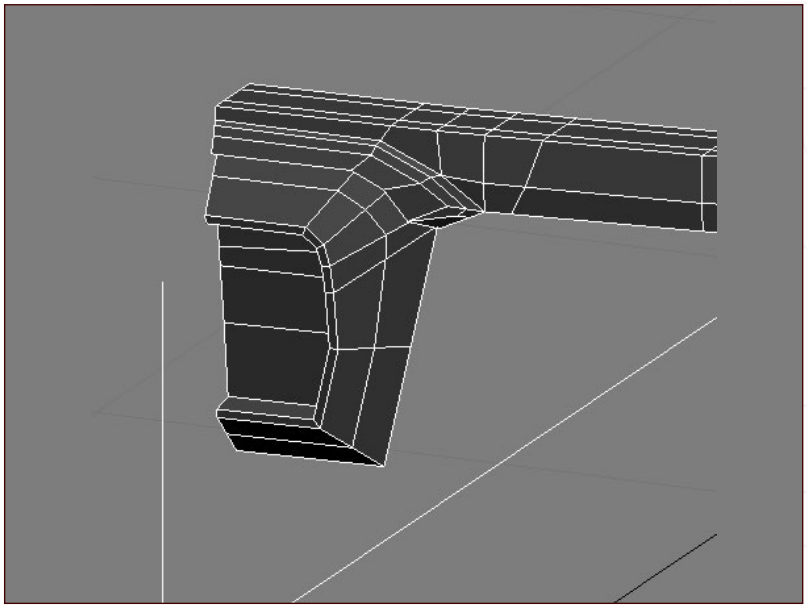
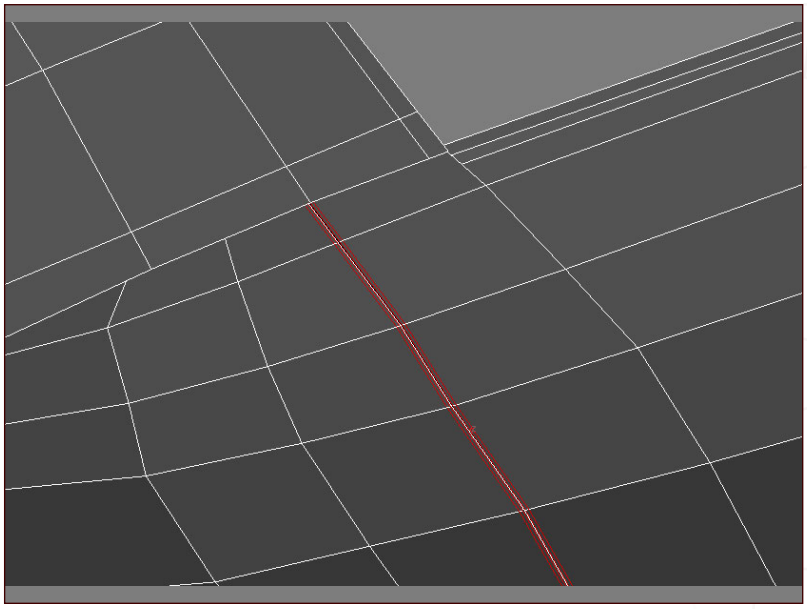


Fig 44



For the door grooves, treat it the same way you do when you want to build a sharp edge. Select the edge loop then chamfer it twice and extrude the polygon loop in the middle. After applying meshsmooth if you still feel that the door groves aren't sharp enough simply add another edge loop (select Edge Ring then Connect with shortcuts alt+r and ctrl+shift+e are almost programmed in my brain now as I use it a lot (**Fig45** and **Fig46**).

Fig 45



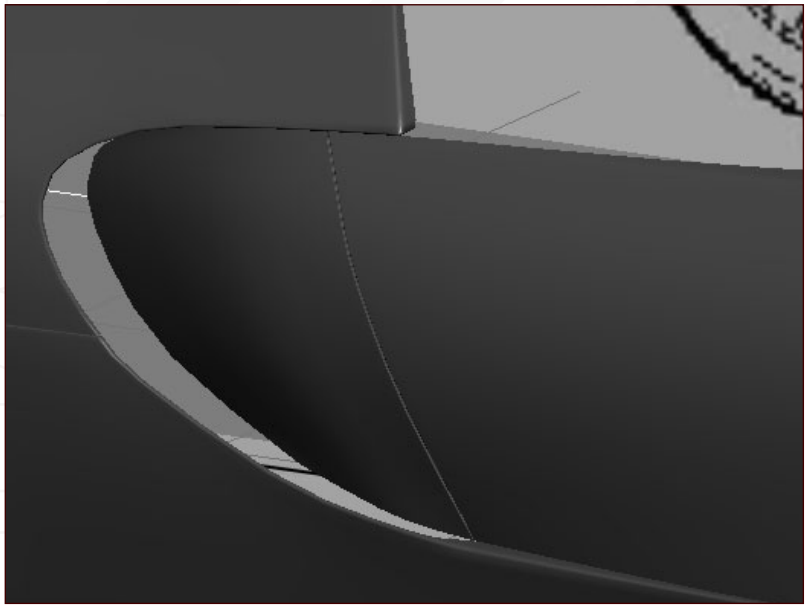


Fig 46

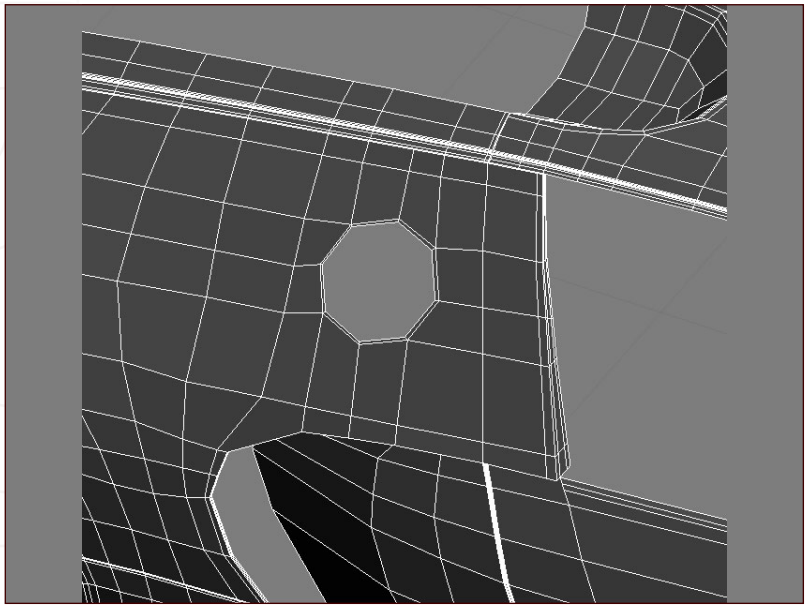


Fig 47

For the fuel cap just use an 8 sided cylinder as reference and make the cuts as shown (**Fig47**).

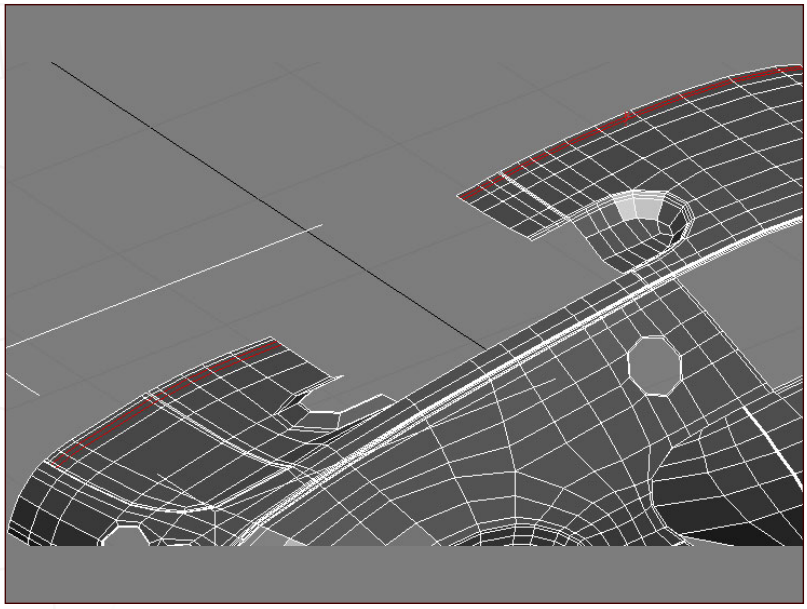


Fig 48

Add edge loops as we've done for the hood on the roof and back to get the crease (**Fig48**).

For the back flicker just detach the faces that make it and add couple of edge loops in it and around its gap so that the edges stay sharp and make sure it remains as quads (**Fig49** and **Fig51**).

Fig 49

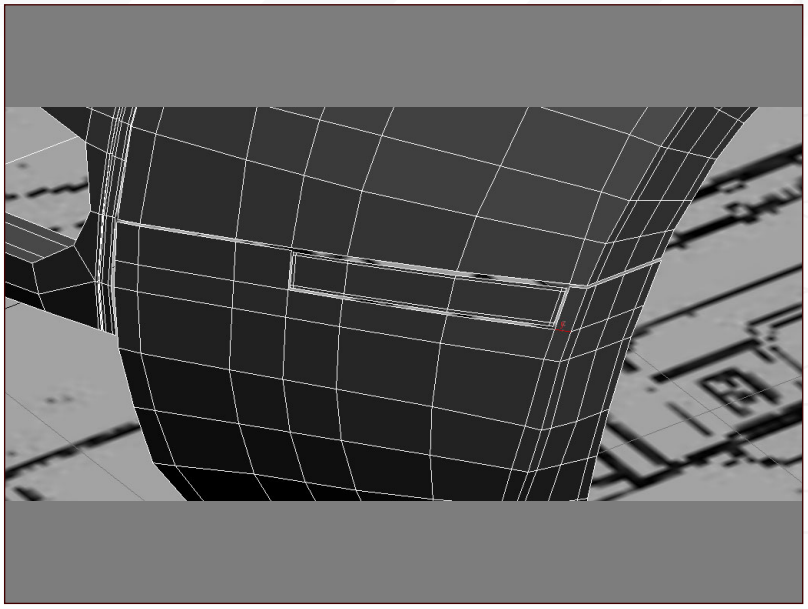
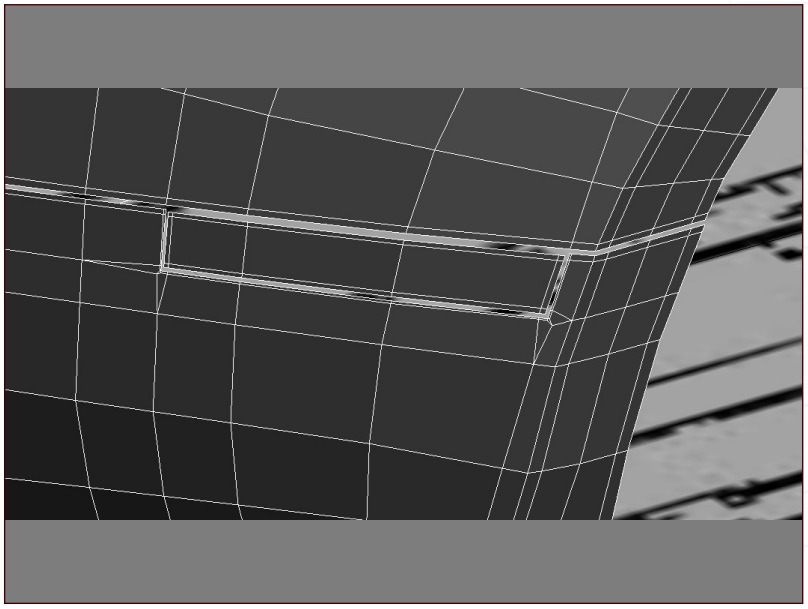
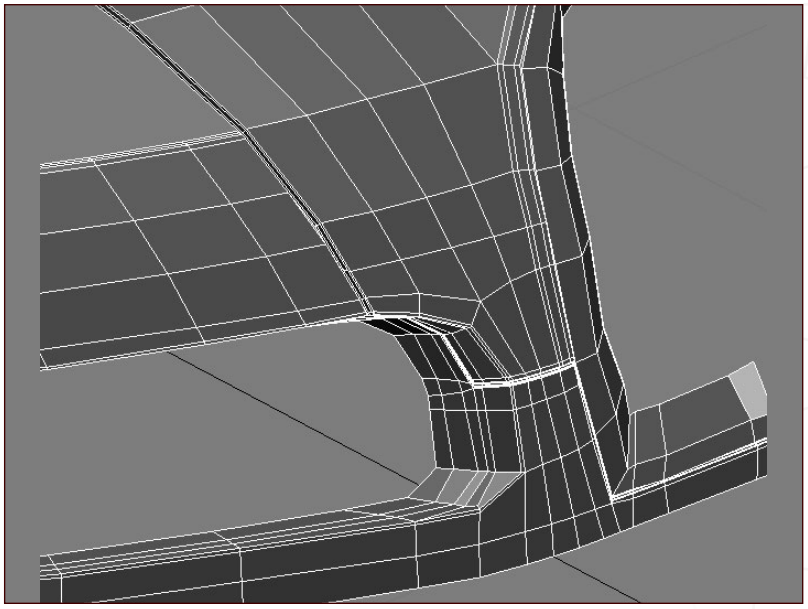


Fig 50



Now add edges and cuts so that you have everything sharp and looking right when adding a meshsmooth modifier. Take any holes you have in the mesh inside by extruding so that you have some thickness to the body, and add any details you think are necessary. All the remaining work now is similar to what we have already done or just extra tweaking so that you have everything looking right (**Fig51, Fig52, Fig53, Fig54. Fig55, Fig56, Fig57, Fig58, Fig59, Fig60** and **Fig61**).

Fig 51



You might have some areas with creases or artifacts but all can be fixed with either welding some of the vertices or simply moving them to the right positions. It's also a good idea to make sure that everything resembles the blueprints and reference image correctly

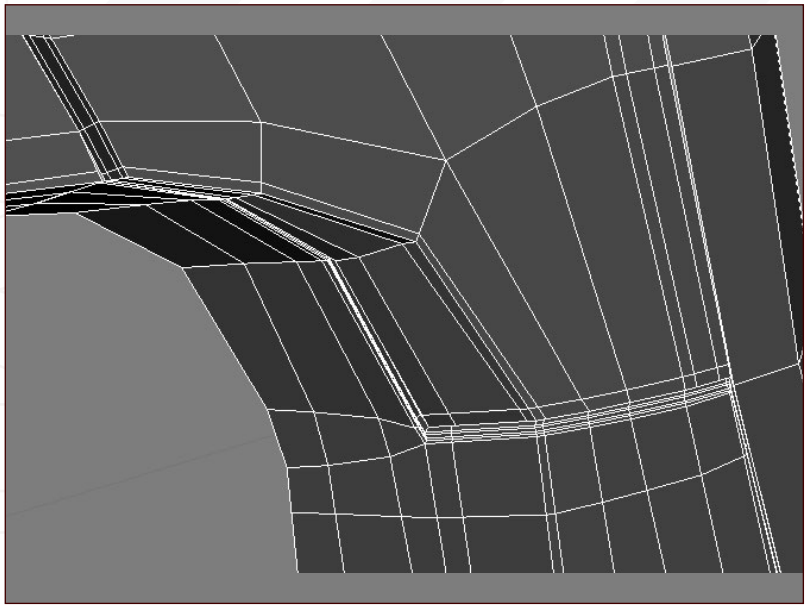


Fig 52

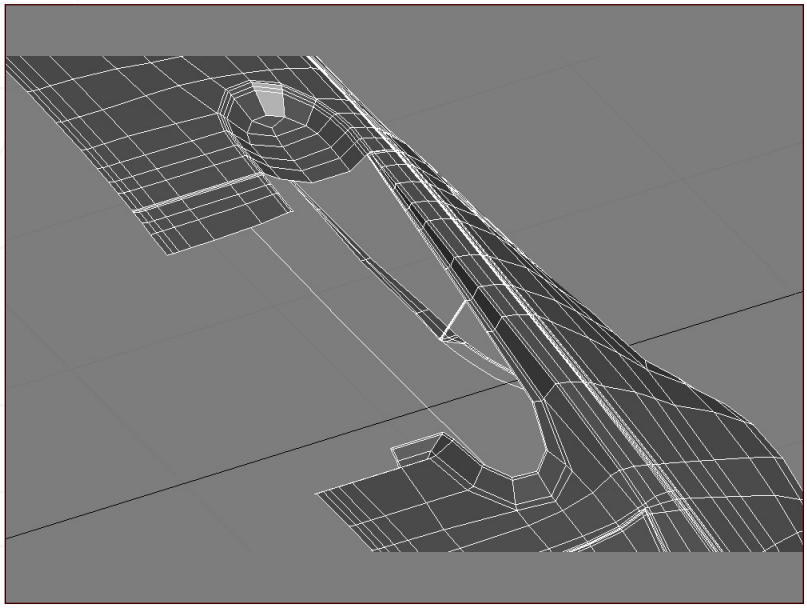


Fig 53

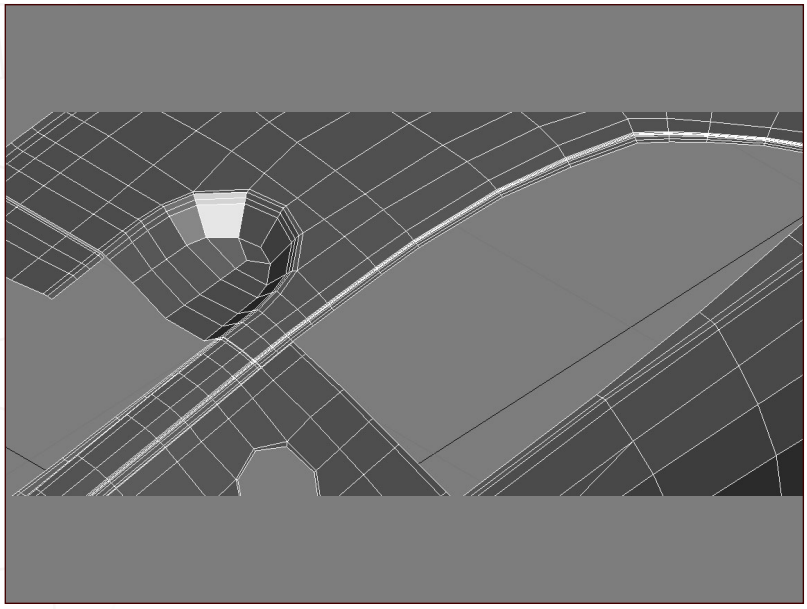


Fig 54

Fig 55

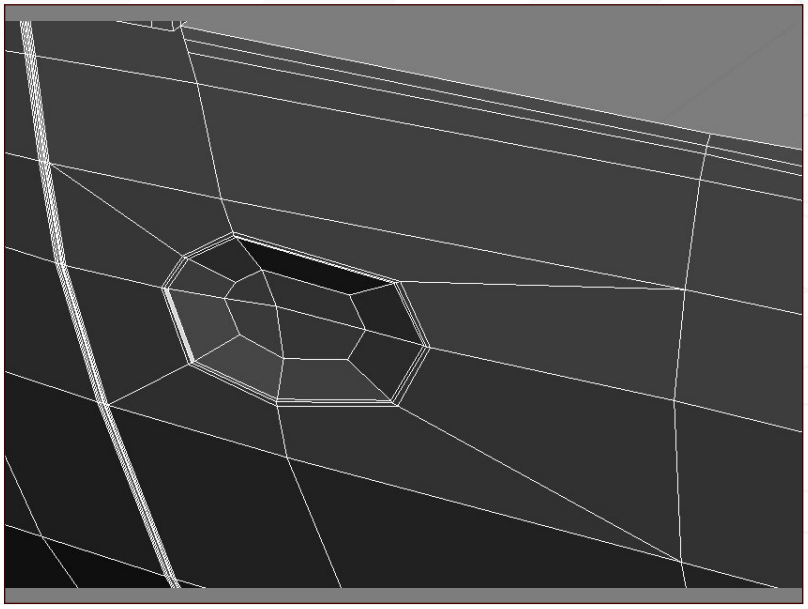


Fig 56

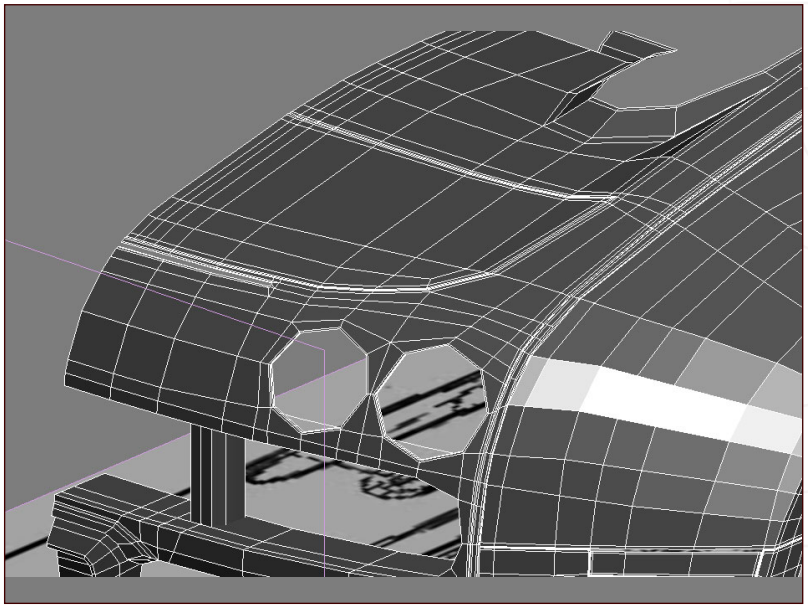
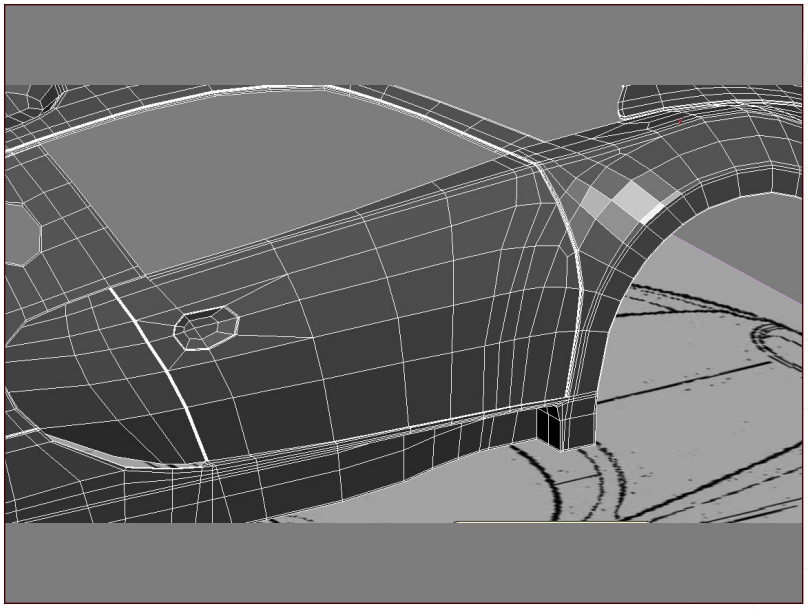


Fig 57



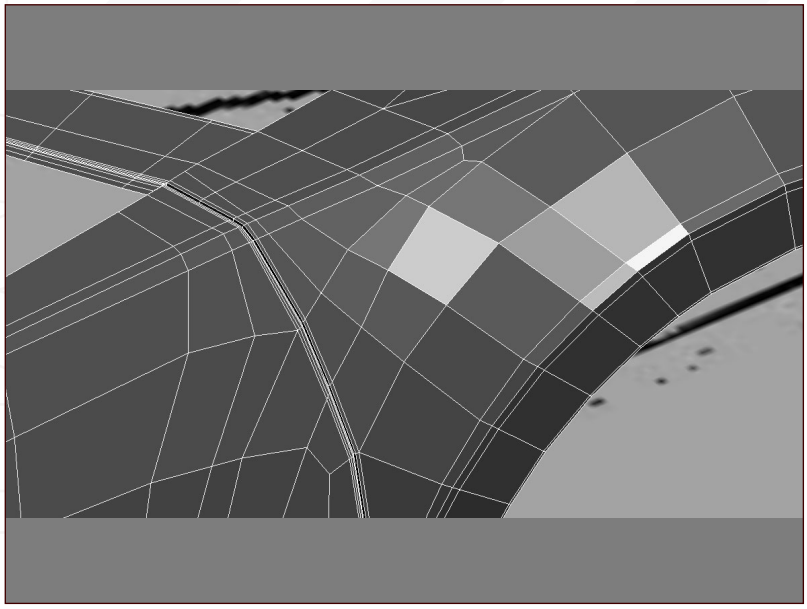


Fig 58

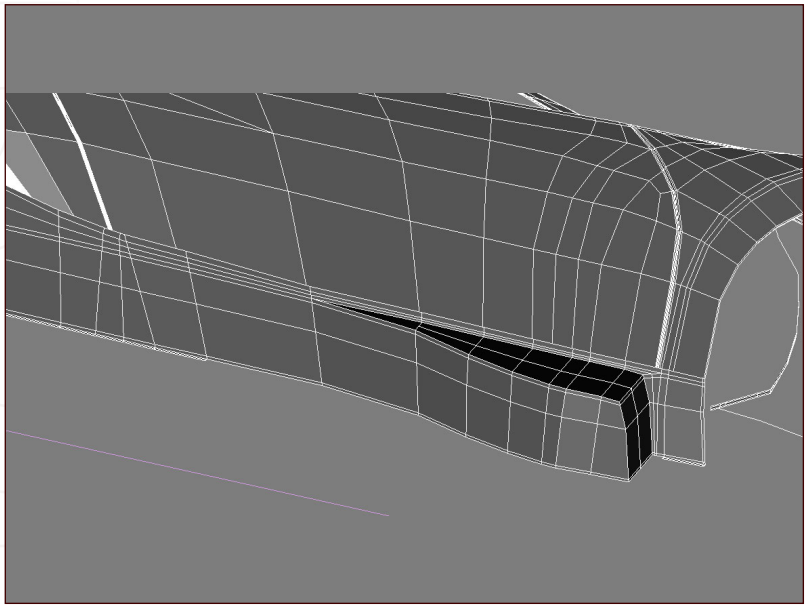


Fig 59

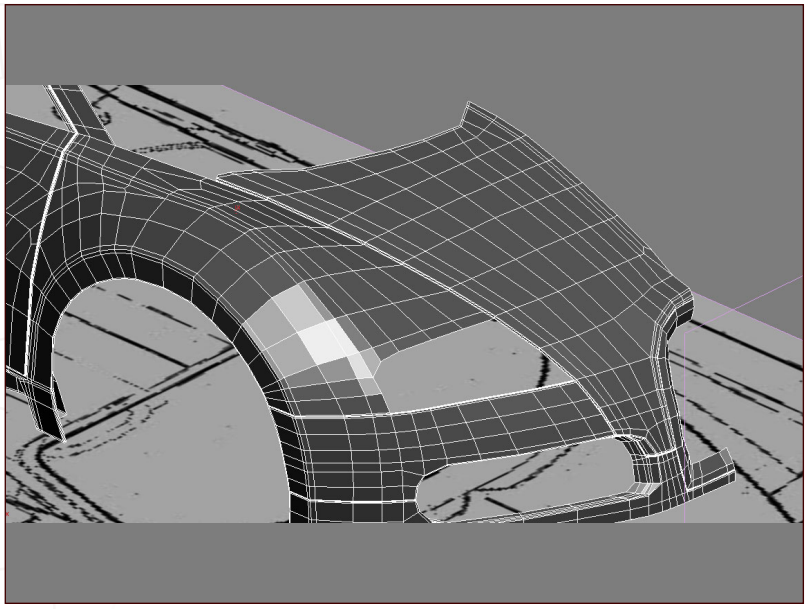
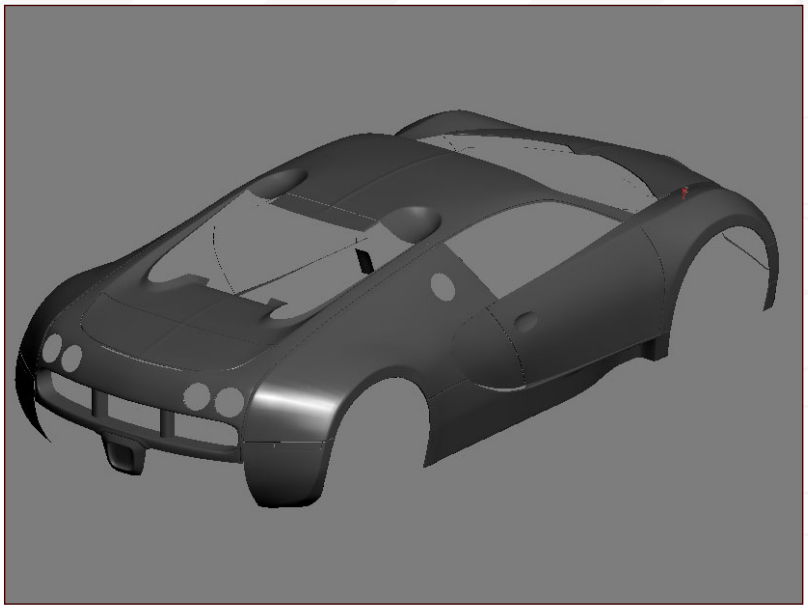


Fig 60

Fig 61



You should have something similar to this after you are done. In the next part we will go over doing all the remaining details. Take your time when doing this model because the process might look quick but it did take me sometime to get the model done so do not rush! (**Fig62** and **Fig63**).

Fig 62

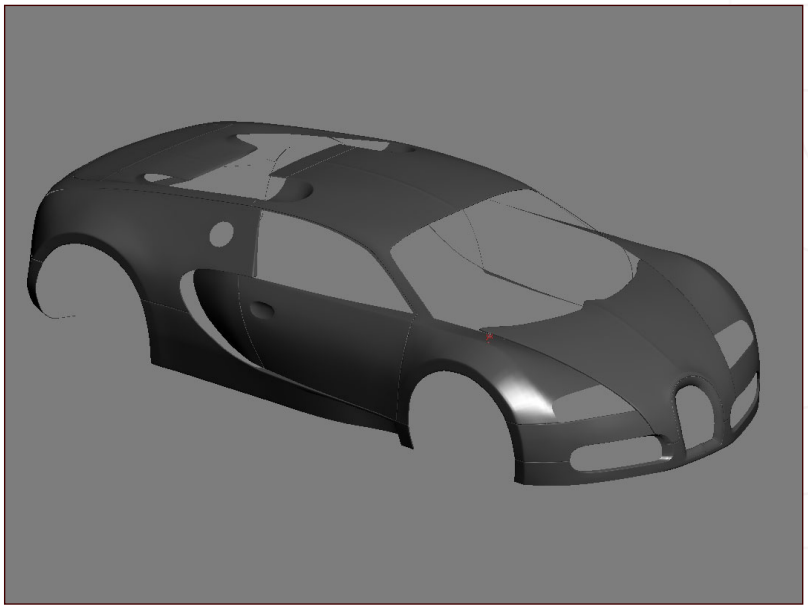
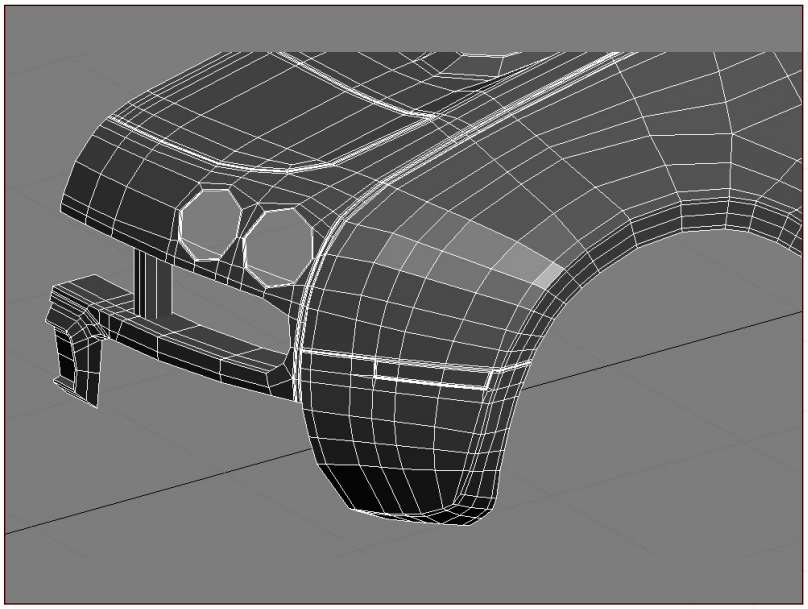


Fig 63



BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

Tutorial by:
ALI ISMAIL
For more from this artist visit:
http://www.aliismail.com/
Or contact them:
ali@aliismail.com

Bugatti Veyron
car modelling series

The series will cover an in-depth and comprehensive guide to modelling the amazing Bugatti Veyron car, from start to finish, and will focus on the key techniques and stages involved in building the chassis, as well as details such as the windows, lights, vents, petrol caps, engine parts and so on. We will then move on to creating the wheels, including tyres and hubcaps, before going on to building and incorporating an interior, namely the dashboard and seating. The series will proceed with a section on creating and applying materials for the numerous parts of the car, such as the paint work, chrome, rubber and glass, before concluding with a tutorial devoted to setting the scene for a finished render. The final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This series aims to show a comprehensive guide to creating a finished car for people new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but does endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
MODELLING THE CHASSIS - BASICS

Issue 031 March 2008
MODELLING THE CHASSIS - DETAILS

Issue 031 March 2008
LIGHTS, RADIATOR GRILL & VENTS

Issue 032 April 2008
WHEELS, TYRES & RIMS

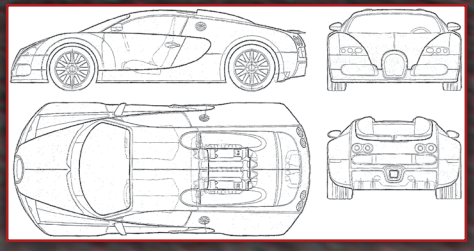
Issue 033 May 2008
INTERIOR

Issue 034 June 2008
THE MATERIALS & FINISHES

Issue 035 July 2008
LIGHTING SET UP & RENDER

ENJOY ...

Blueprints available here:



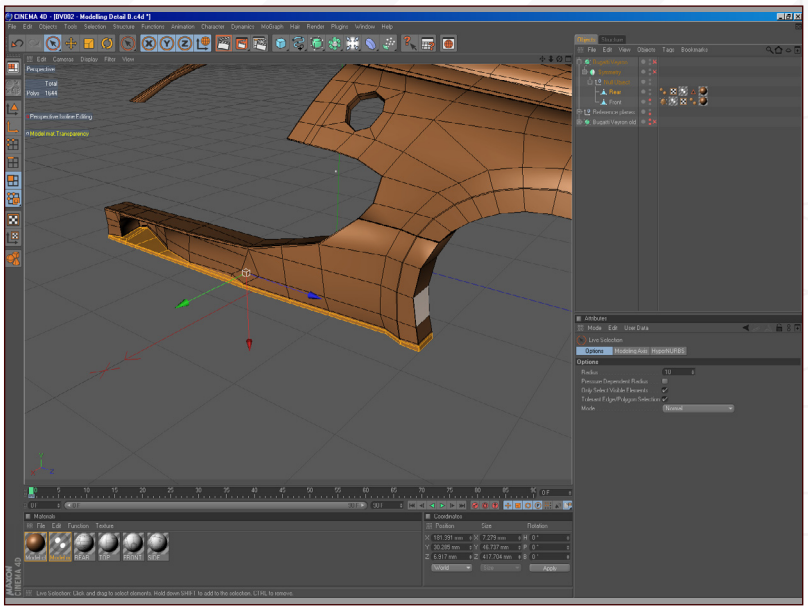
www.the-blueprints.com

BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

In this section of the tutorial I will be covering how to model the details, such as the lights, vents, filler cap, wing mirrors and the retractable rear wing/air brake.

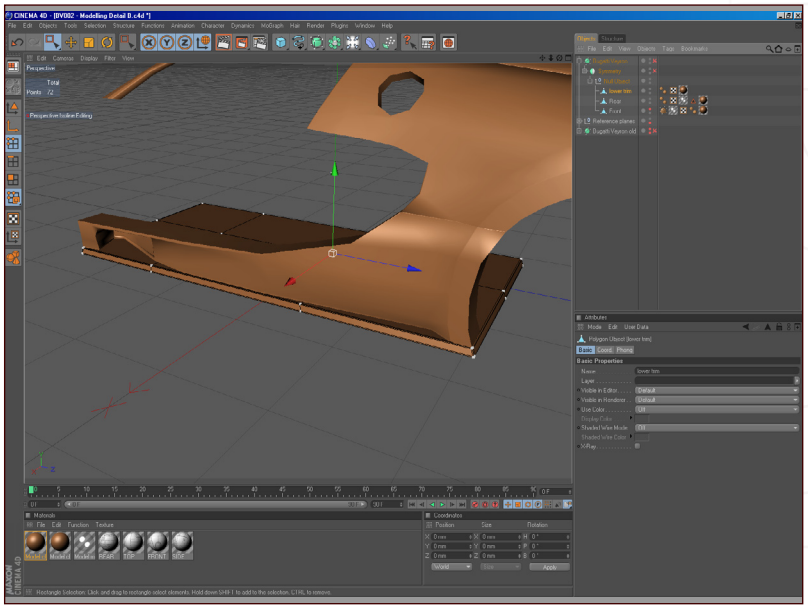
First I begin by rectifying a mistake I made in an earlier section. Select the polygons in (**Fig01**) and delete them.

Fig 01



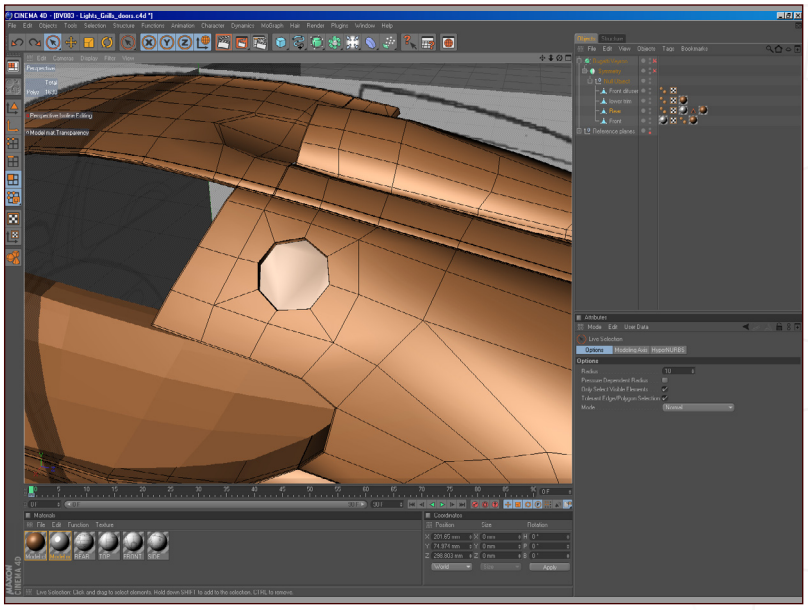
Add a cube and slice it as shown in (**Fig02**). This lower section is straight and not curved as I had it before. In addition, the trim is separate from the body and will be a different colour separating it will make it easier later to apply the colour.

Fig 02



Creating the hole for the filler cap I used the same technique as was performed in creating the rear lights. That is, to use a spline circle and to snap the points to it in order to form the shape (**Fig03**). A lot of time was spent on keeping the flow of the polygons from the wheel arch to the filler cap smooth as the isometric plans of the Veyrons filler cap don't quite match up in all views.

Fig 03



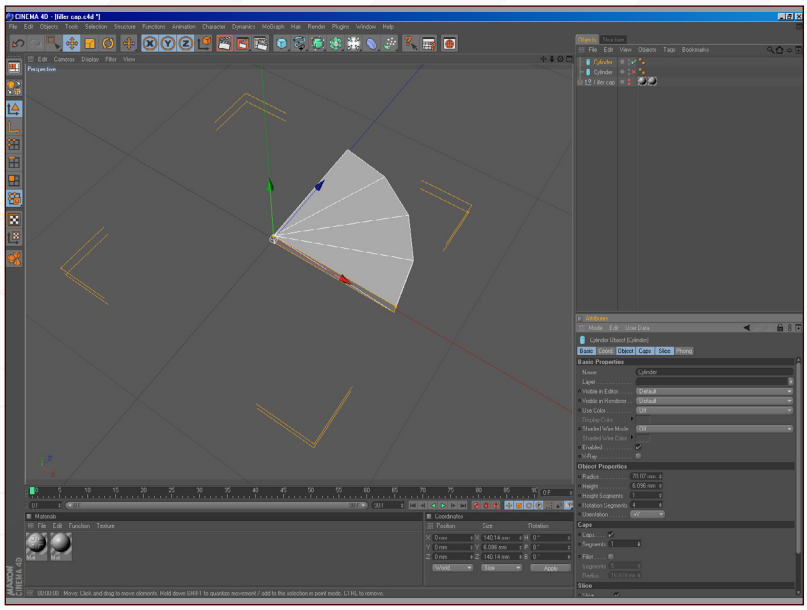


Fig 04

Now we have made the opening for the filler cap it's time to create the cap to fit. I begin by opening a new document and working from the centre of the world axis. Add a cylinder to the scene and give it 4 rotation segments and give it a slice of 270/360 so that you have a quarter of the cylinder as shown in (**Fig04**).

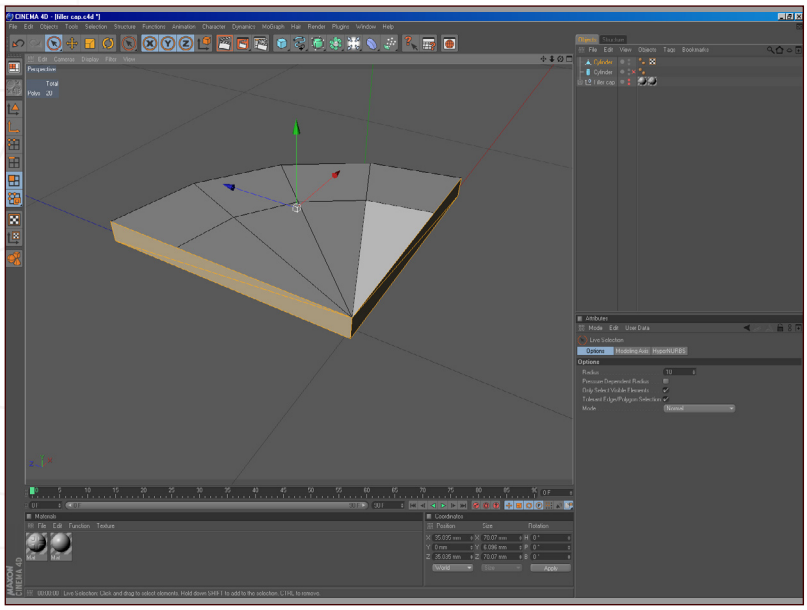


Fig 05

Delete the inside polygons of the cylinder as shown here (**Fig05**).

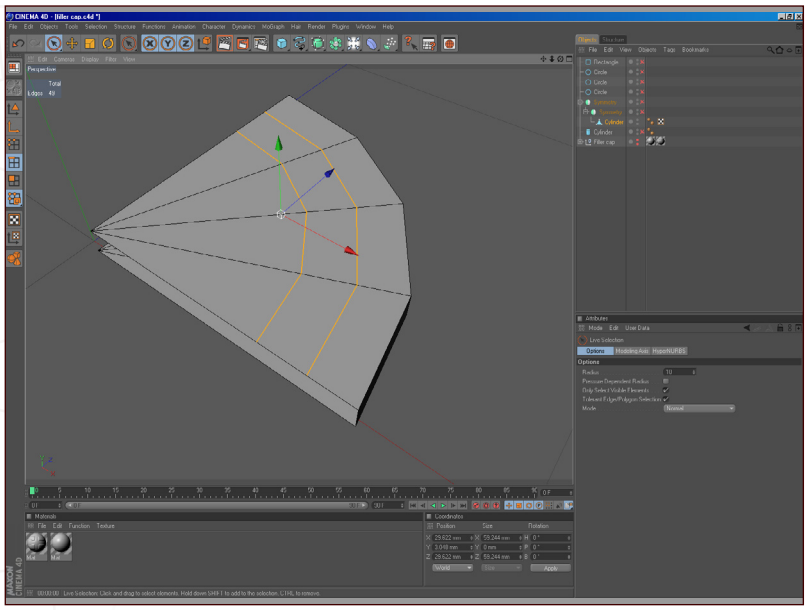
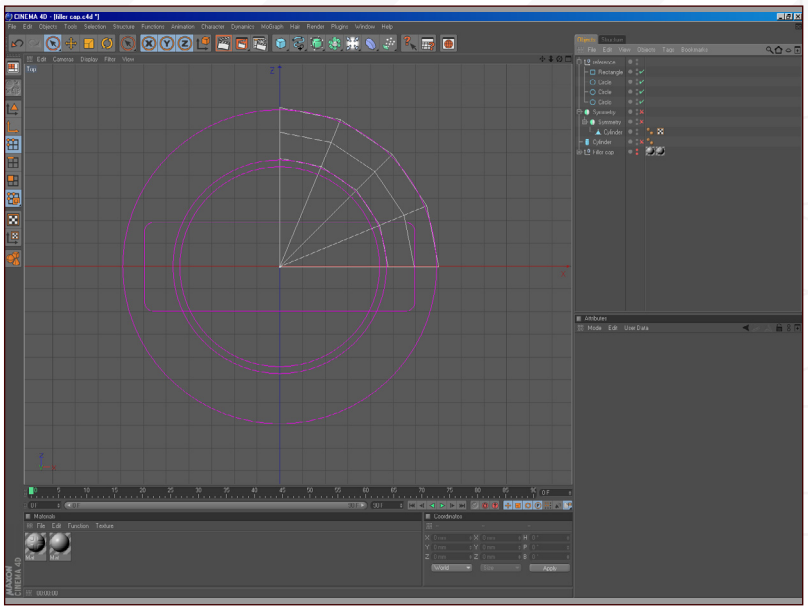


Fig 06

Now add 2 loop knife cuts to the top surface (**Fig06**).

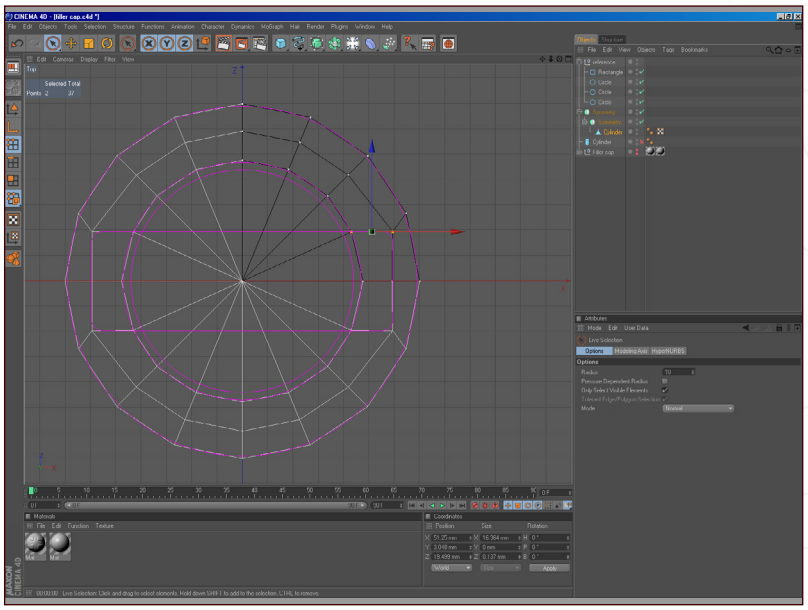
Now create a spline template to follow by adding two spline circles and a corner radius rectangle as shown in (**Fig07**). I always colour the templates magenta as this differentiates it from the selected geometry.

Fig 07



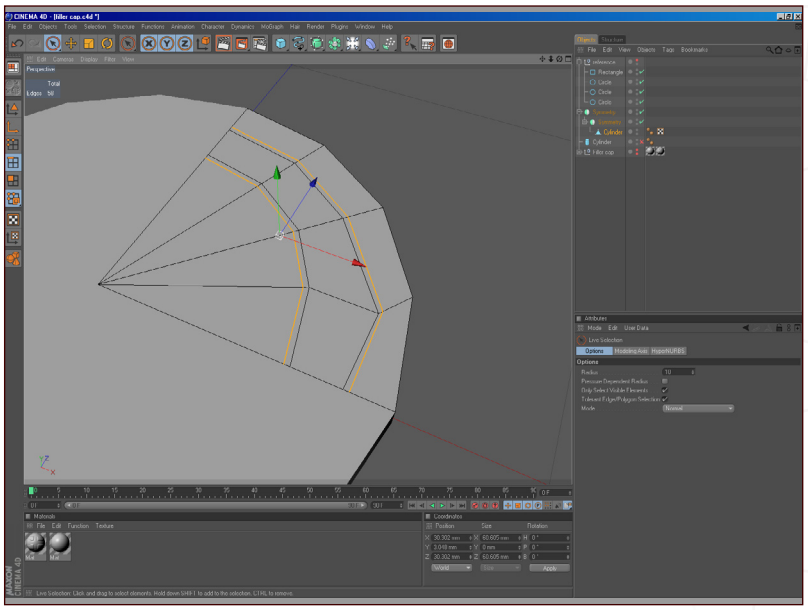
I've added two Symmetry objects making sure that I change one to make the completed cylinder again. This is a quick trick to save having to move lots of points and allows me to quickly move single points around. As you can see I've begun to move points to match the template (**Fig08**).

Fig 08



Now add two more cuts as shown (**Fig09**).

Fig 09



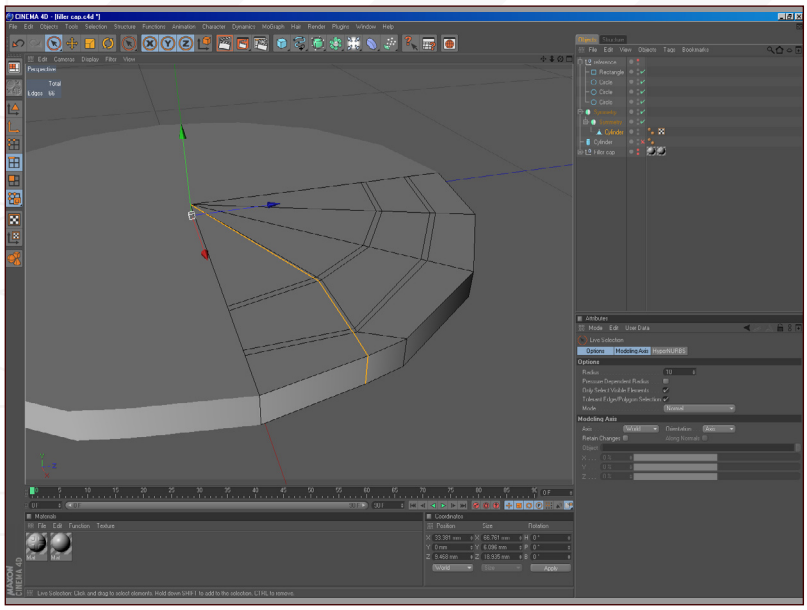


Fig 10

At this point it's a good idea to deselect all of the points and optimise the geometry to make sure the top of the cylinder welds to the sides (NB: cinema 4d separates the geometry between the sides and the top faces of a cylinder when collapsed). It's time to add another cut as shown (**Fig10**).

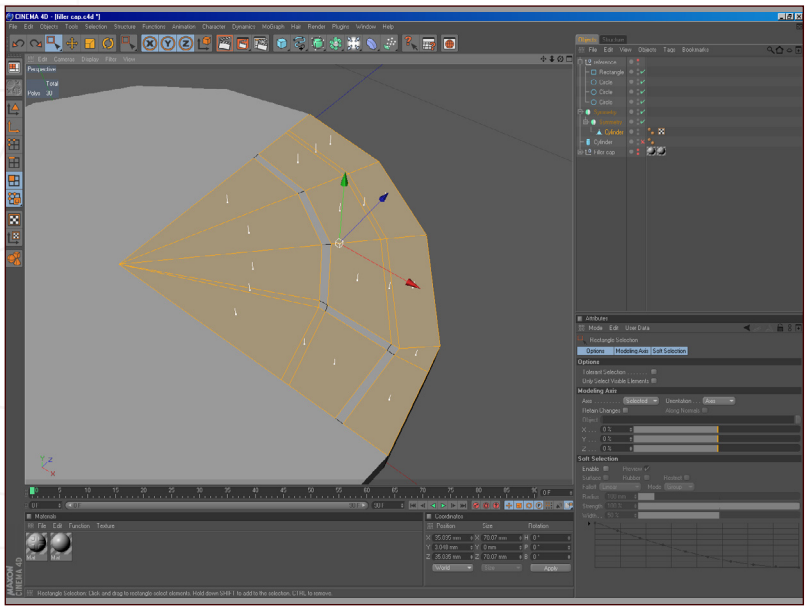


Fig 11

Select all of the polygons and extrude them out once slightly, then again at the required height (**Fig11**).

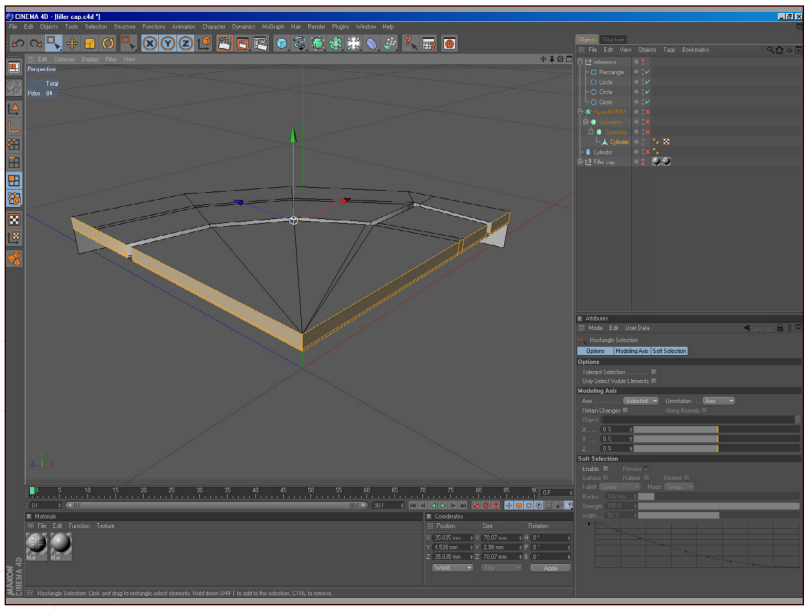
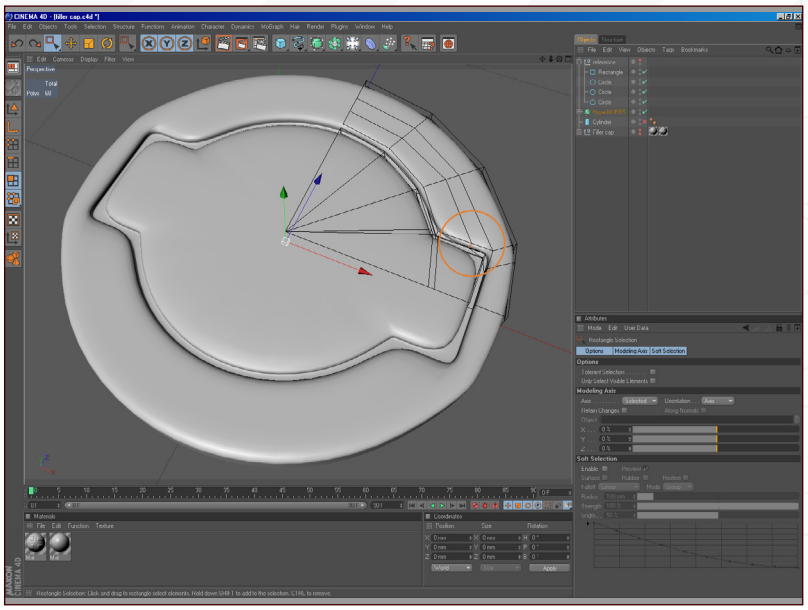


Fig 12

Now delete the polygons on the inside or this will affect the symmetry objects (**Fig12**).

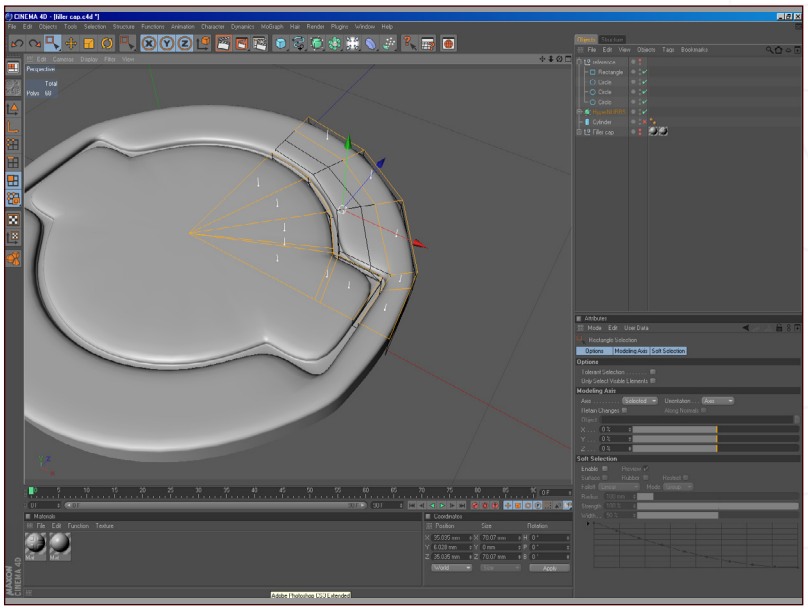
Add a hypernurbs to the top of the hierarchy and move the edge to help round off the outer wall of the recess to match the inner (**Fig13**).

Fig 13



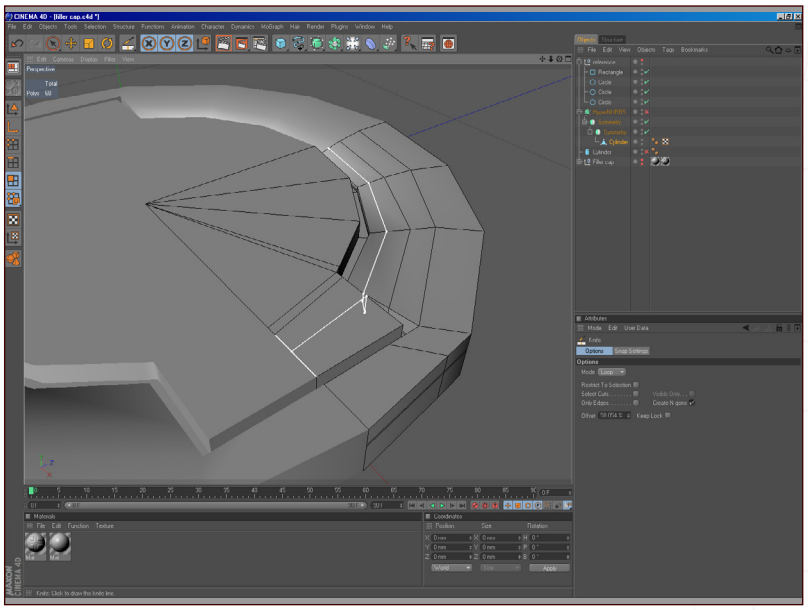
Select the polygons and move them upwards. This will curve the surface down into the recess. Make sure to lower the inner parts to create the overall curve (**Fig14**).

Fig 14



Once the lower section is in the right place add another cut (**Fig15**).

Fig 15



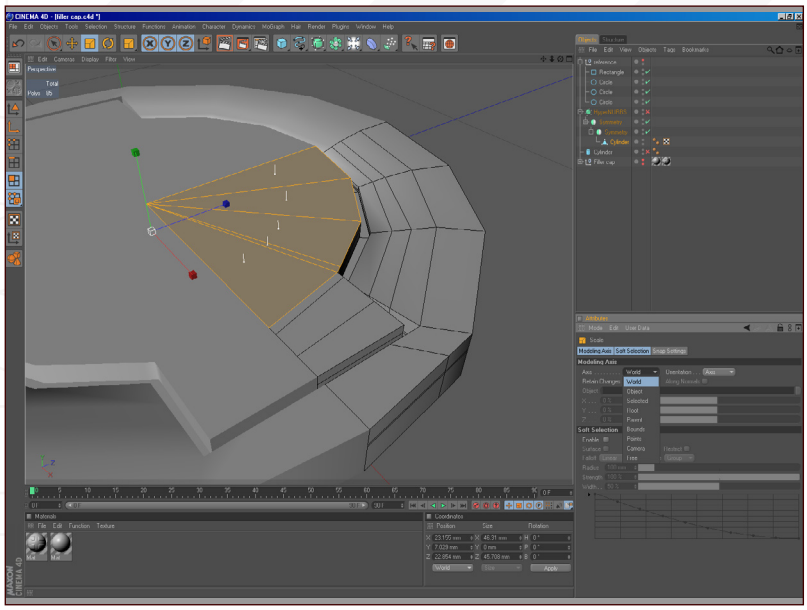


Fig 16

Select the polygons and scale them down using the model axis set to world (**Fig16**).

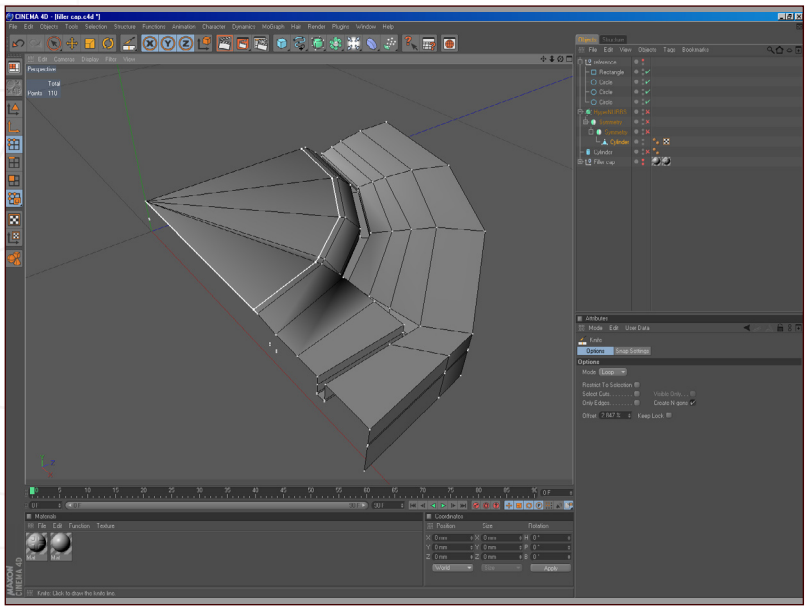


Fig 17

Once you have scaled them inward, make a loop cut on the inside of the first edge loop (**Fig17**).

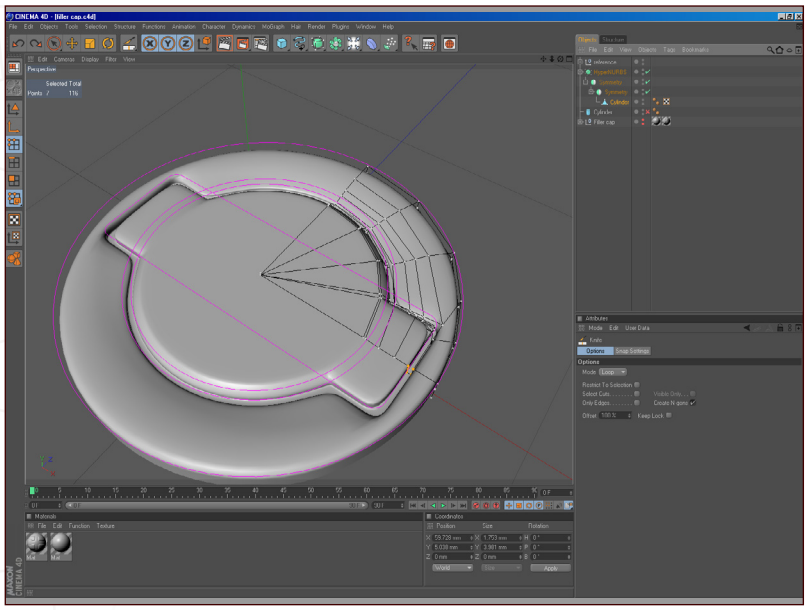
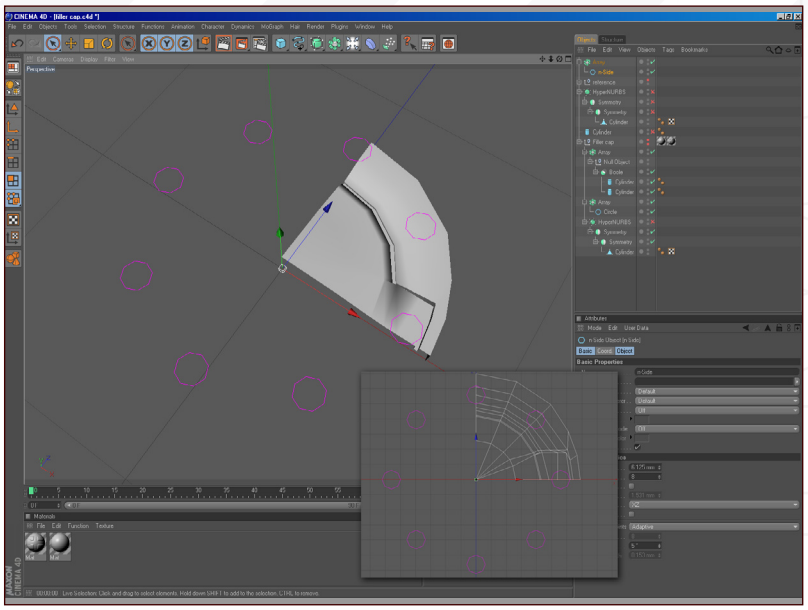


Fig 18

All that's needed now is to move the points out slightly to give the final curved appearance of the main body (**Fig18**).

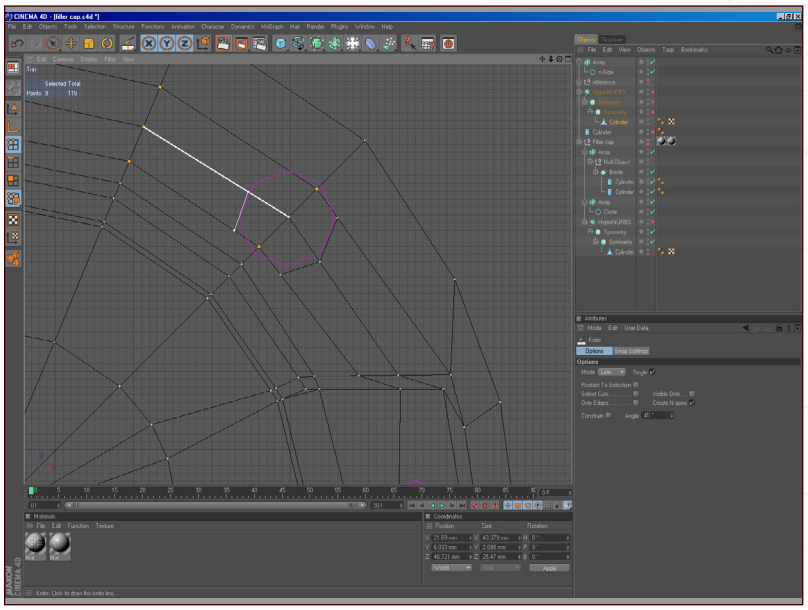
Now add an N-side spline and change its sides so that it has 8. Now array the N-side spline with an array object with 7 copies. This will be our guide for placing the holes for the locking screws (**Fig19**).

Fig 19



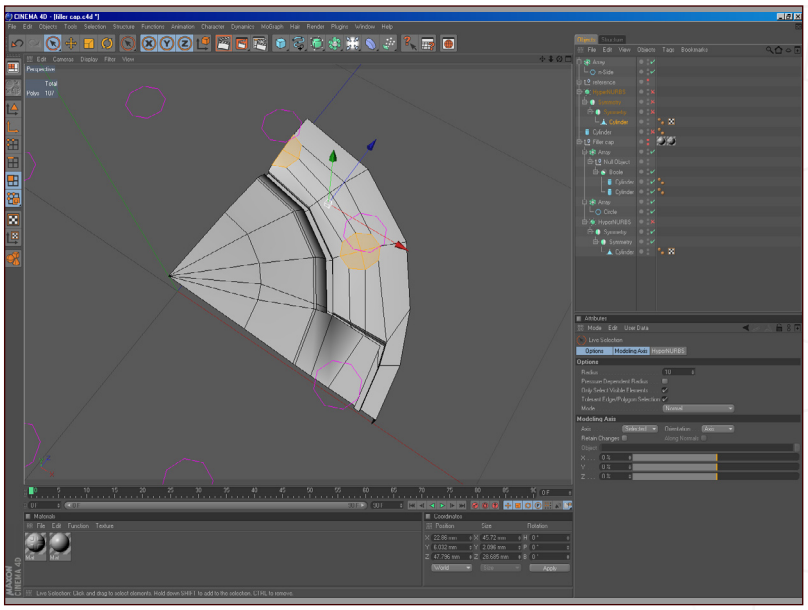
Knife line cut only visible polygons and roughly cut out around the guide for the holes (**Fig20**).

Fig 20



After cutting the holes and aligning them in the top view using the slide tool you should end up with the octagons. The polygons selected should be extruded inwards once to the depth needed then extruded again slightly to keep a sharp inside edge and softer outer edge. Remember to make sure the caps check box is unchecked when using the extrude tool (**Fig21**).

Fig 21



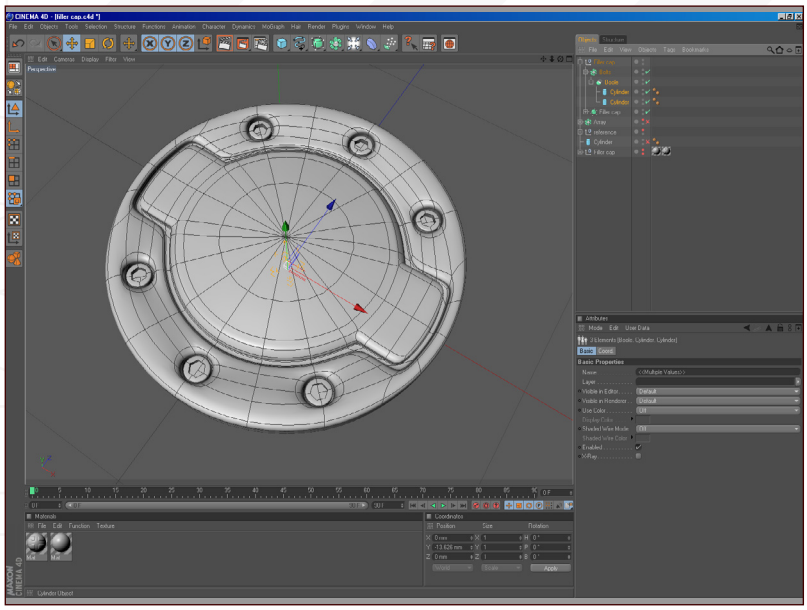


Fig 22

To add the hex screws all I did was use a cylinder with 20 rotation segments and Boolean it with another smaller cylinder with 6 rotation segments. This will give you a simple hex screw and all that's needed is to use the array object from the guide to give us the 8 screws we need. Align the screws to fit the holes and the filler cap is complete (**Fig22**).

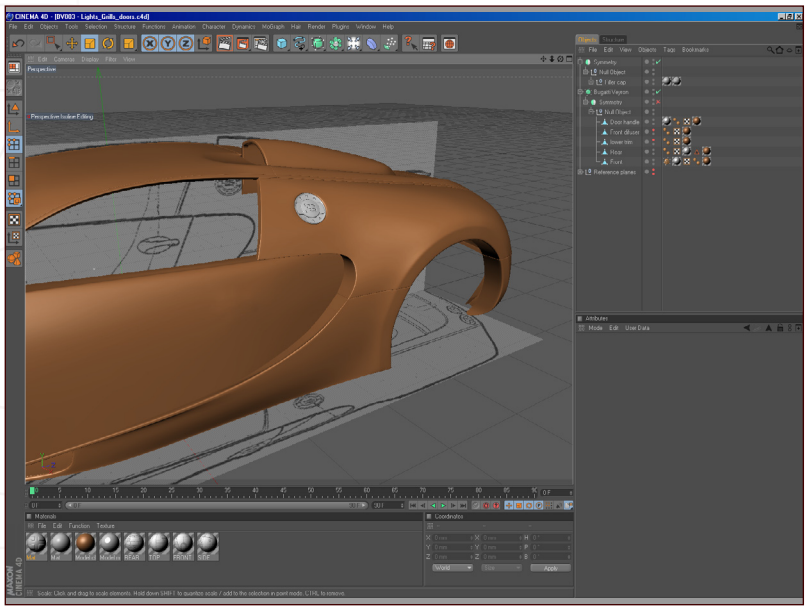


Fig 23

We will now need to place the filler cap back into the car body scene just by simply cutting and pasting the selected object from one document to the other. Align the filler cap to the hole and drop it in a hierarchy of a symmetry object--->null object. This group will be for all components that are mirrored but don't need a hypernurbs object to smooth them out (**Fig23**).

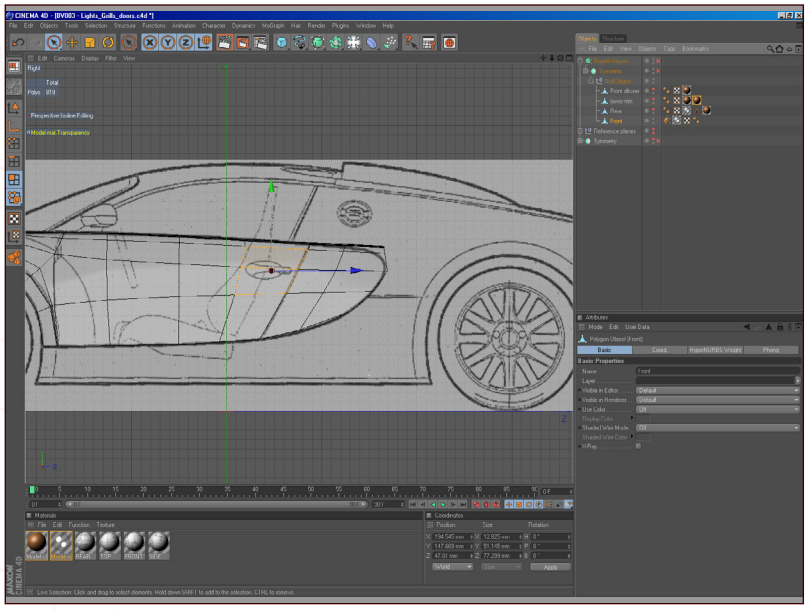
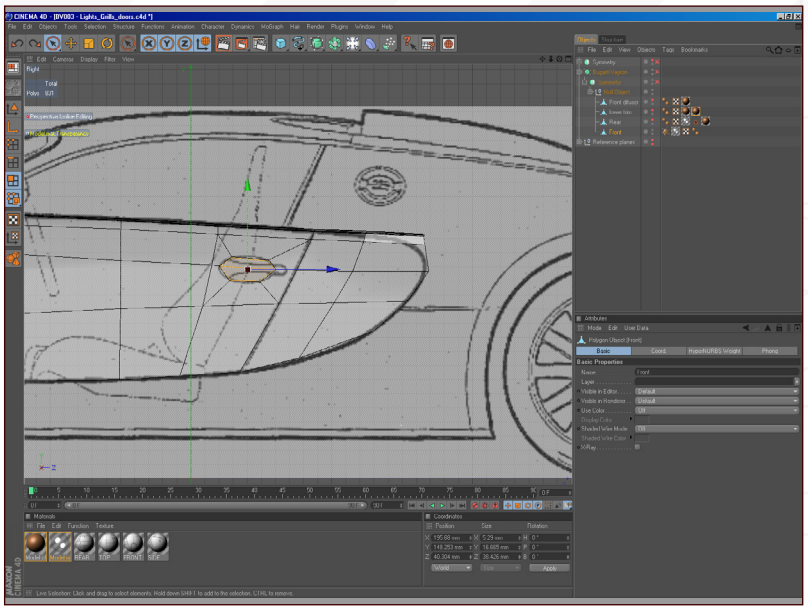


Fig 24

Now its time to model the door handle. First I begin by creating the indent in the door for the handle to sit in. Select the polygons and extrude inner (**Fig24**).

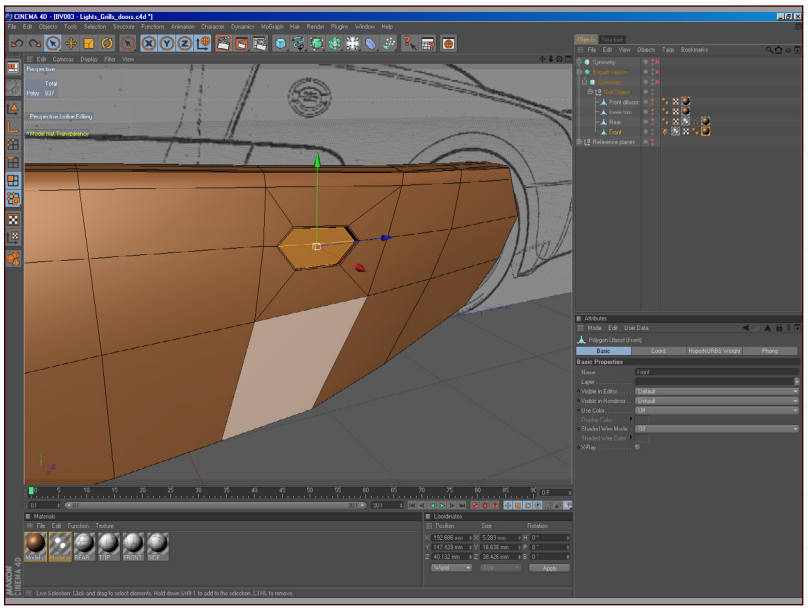
Move the newly created points to form the basic shape in the side view as shown in (**Fig25**).

Fig 25



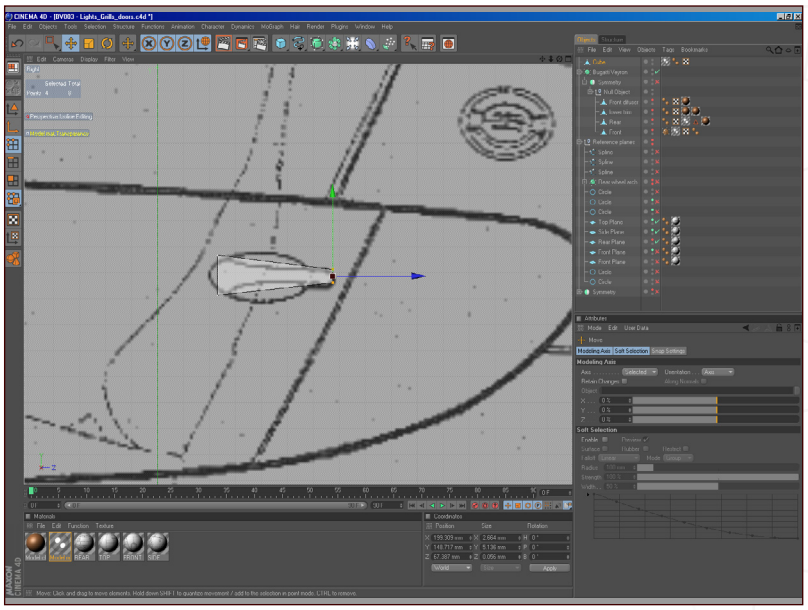
Now extrude the selected polygons and extrude inner slightly then extrude inner. Move the new inner points to create the soft indent desired (**Fig26**).

Fig 26



For the handle I begin with a cube and roughly position it in the correct place and make it editable. With the cube editable you can roughly shape it (**Fig27**).

Fig 27



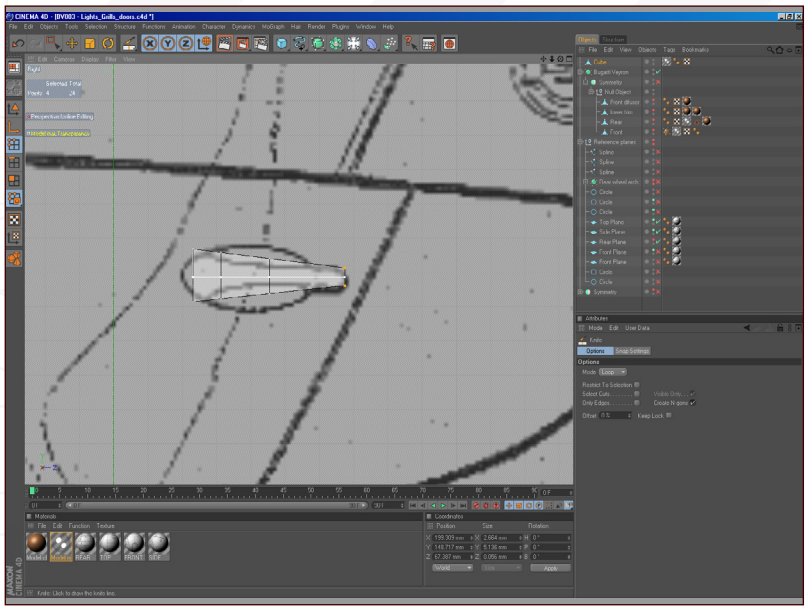


Fig 28

Add in two loop cuts and keep shaping the handle (**Fig28**).

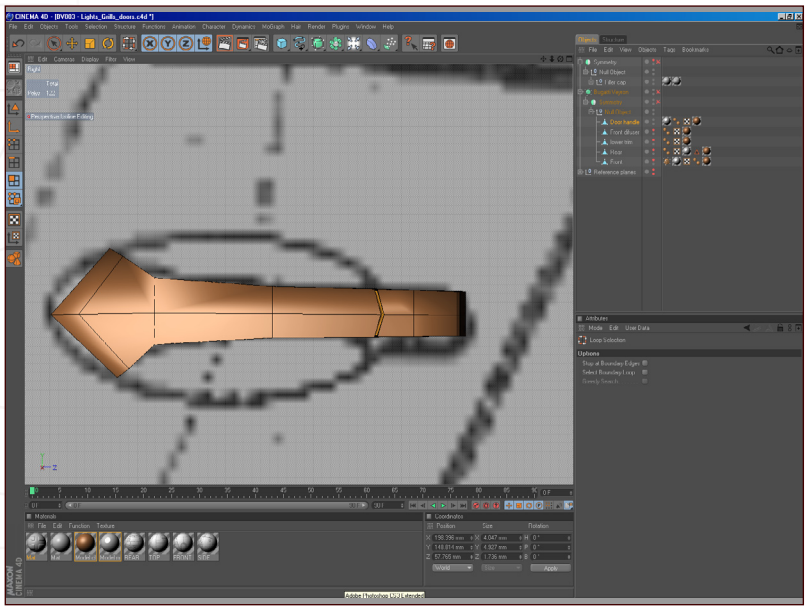


Fig 29

Remember to keep looking at your reference photos to decipher how the handle is shaped as it is very difficult to utilise the plans for this part. As **Fig29** shows I've added more loop cuts and extruded in some polygons to create the cutline between the handle on the door and the catch that sits on the body.

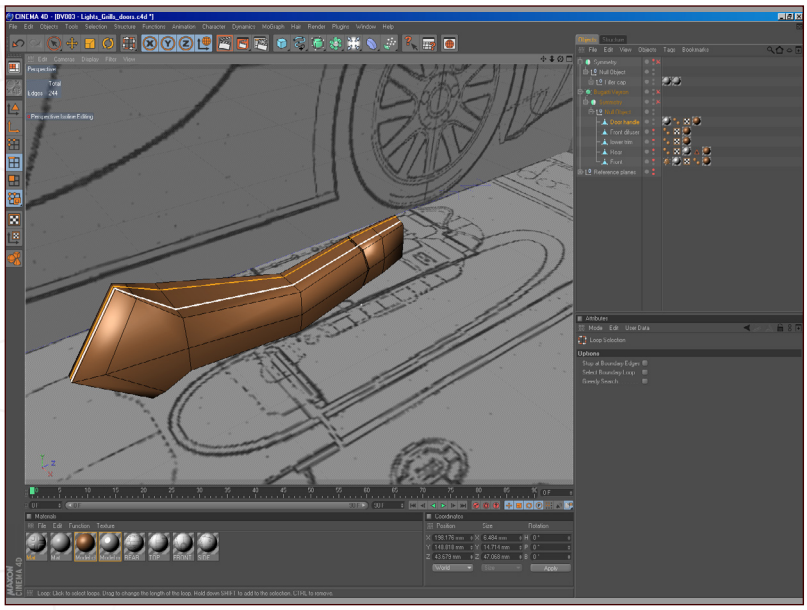
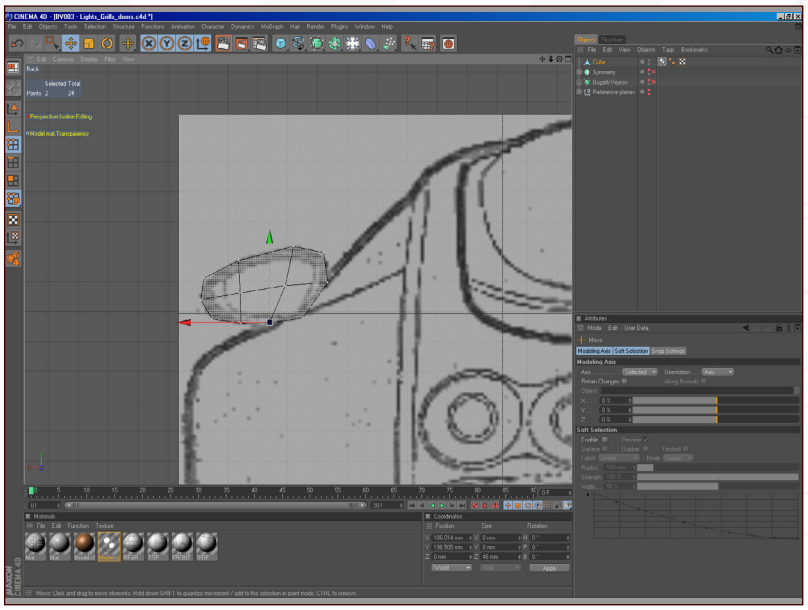


Fig 30

In addition, I've added two loop cuts along the length to help define the handle more. This now completes the handle and all that's needed is to align it to the door panel. Once the door is detached from the body this part will become a child of the door and will rotate on the same axis allowing the door and the handle to move as one (**Fig30**).

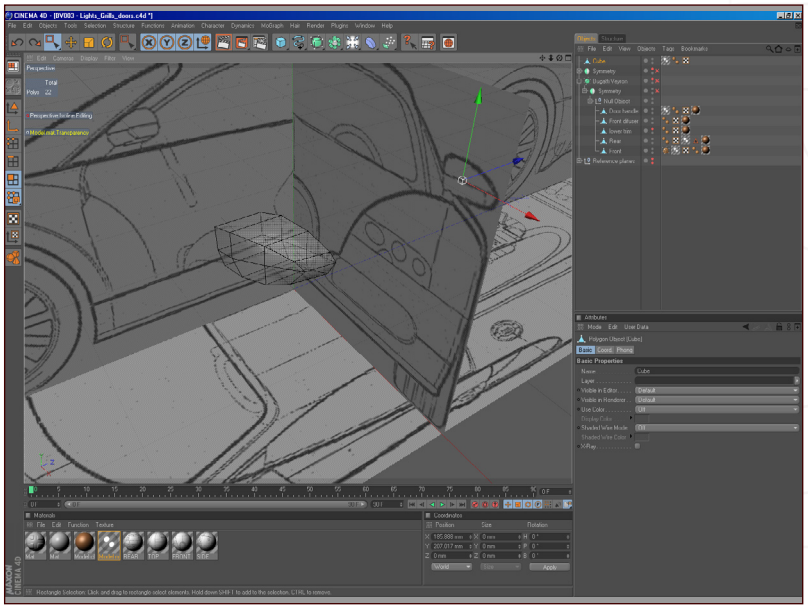
For the wing mirrors I added another cube and roughly positioned it in all views and made it editable. Adding two loop cuts in the rear view I begin to form the basic shape of the wing mirror (**Fig31**).

Fig 31



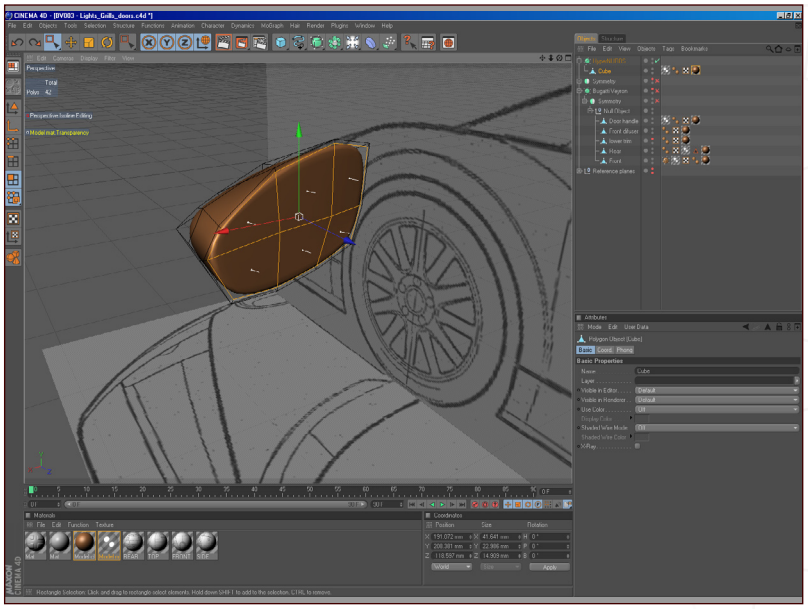
Adding a loop cut around the centre helps to create the flowing mirror body and I add a hypernurbs to smooth out the object (**Fig32**).

Fig 32



Now with the basic overall shape complete its time to create the recess for the mirror. Select the polygons and extrude inner (**Fig33**).

Fig 33



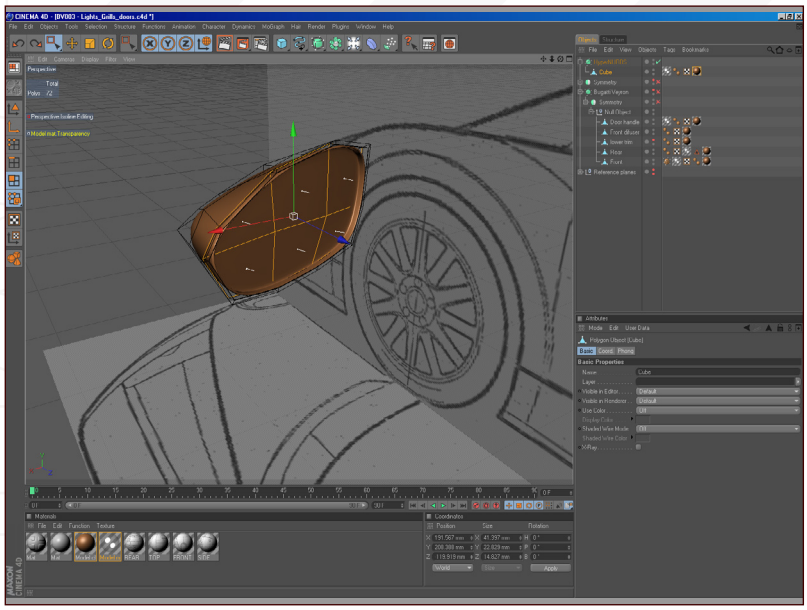


Fig 34

Now with the polygons selected extrude inwards and scale them in slightly, making sure that the edges don't protrude through the outer body. Extrude them inwards slightly once more to define the edge of the mirror. You can extrude the polygons back out if you want to create a gap and to make the mirror look like a separate part, but I'm going to leave it as it is and use different materials to define the mirror from the body (**Fig34**).

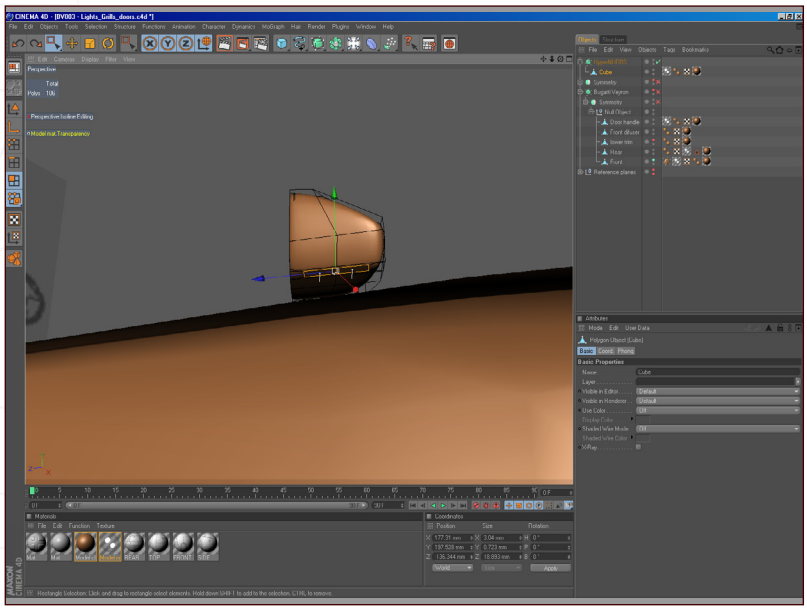


Fig 35

The mirror is connected to the door by a small aerodynamically shaped leg and to create it you need to select the polygons and extrude (**Fig35**).

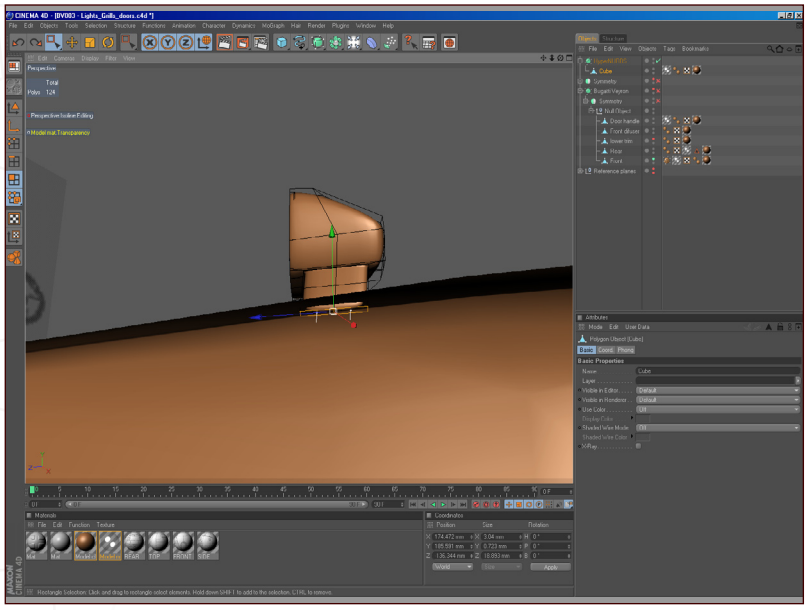
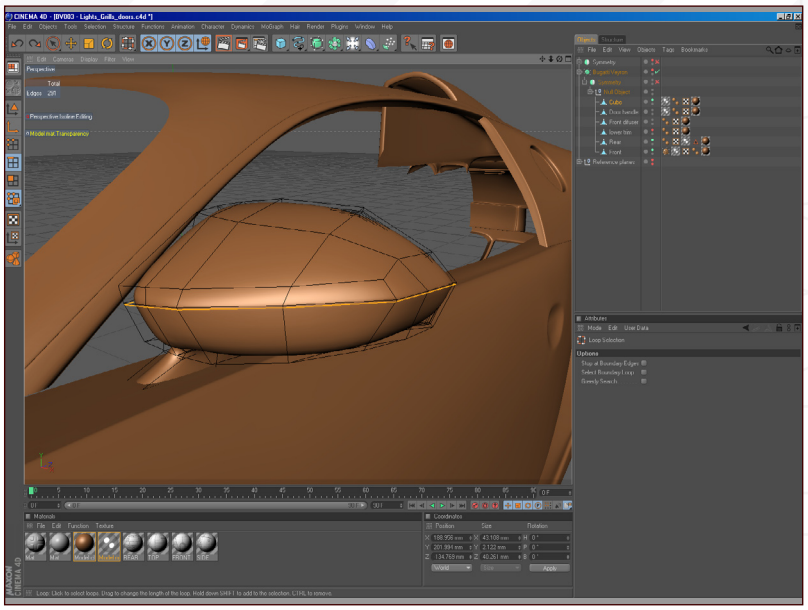


Fig 36

Now shape the points as desired and re select the newly created polygons. Extrude them out twice as shown so that the leg passes through the door panel. Now extrude the polygons to create a bigger area at the base of the leg and add a loop cut near the base to flesh it out. Again this part is difficult and you will need to rely on good photographic references (**Fig36**).

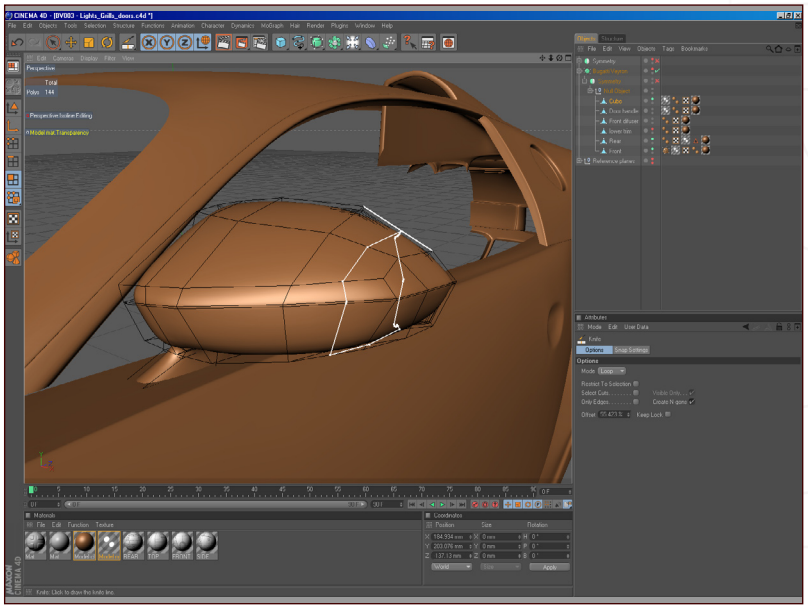
The wing mirror body is made up of two parts as there is a cutline horizontally through the centre. To add this detail I make a loop cut (**Fig37**).

Fig 37



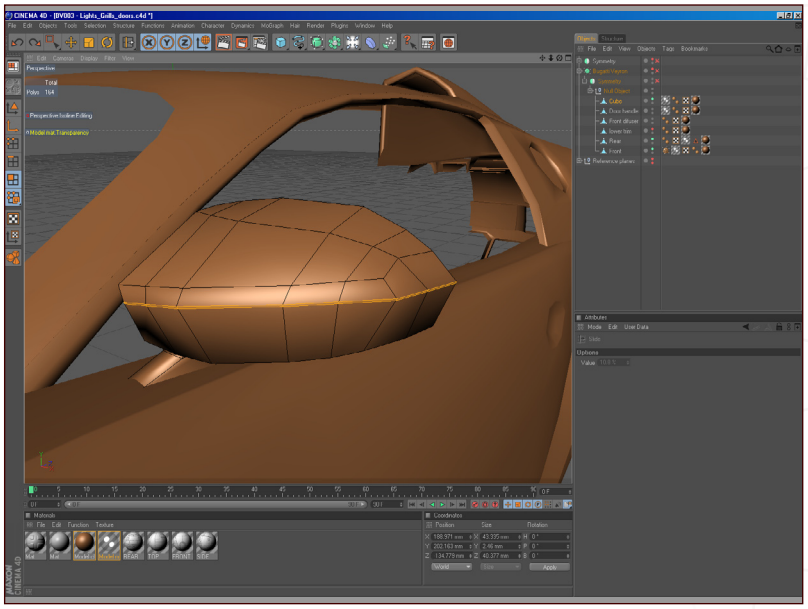
There is a third part to the wing mirror which is an indicator on the outer edge of the bottom section of the wing mirror body. I won't be adding this detail into the model, instead it will be a difference in materials that defines it. To help us later I will add a loop cut and make sure this edge matches the outline of the indicator (**Fig38**).

Fig 38



Now to finish the mirror I will need to extrude the centre polygons inwards that we created earlier. Extrude the polygons in twice to give a clean cutline; notice that the mirror will become more pronounced along this edge. You will need to alter it to smooth out the shape (**Fig39**).

Fig 39



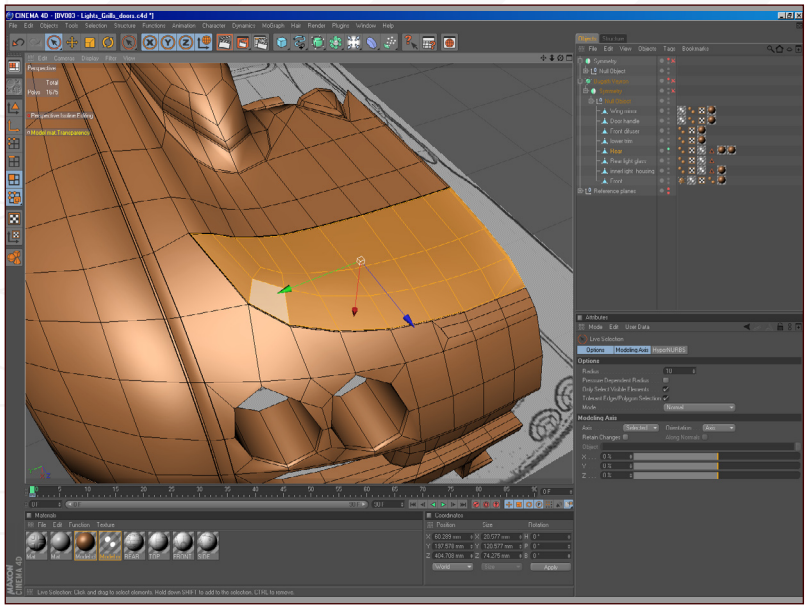


Fig 40

The Bugatti Veyron has a unique rear wing and air brake, which is quite straight forward to model now that we have created the rear of the body in some detail. First select the rear section of the body and the polygons making sure to only select the top polygons. Now right click and click on Split; this will split the selected polygons from the rear body and create a new object containing only them. Rename this object to rear wing (**Fig40**).

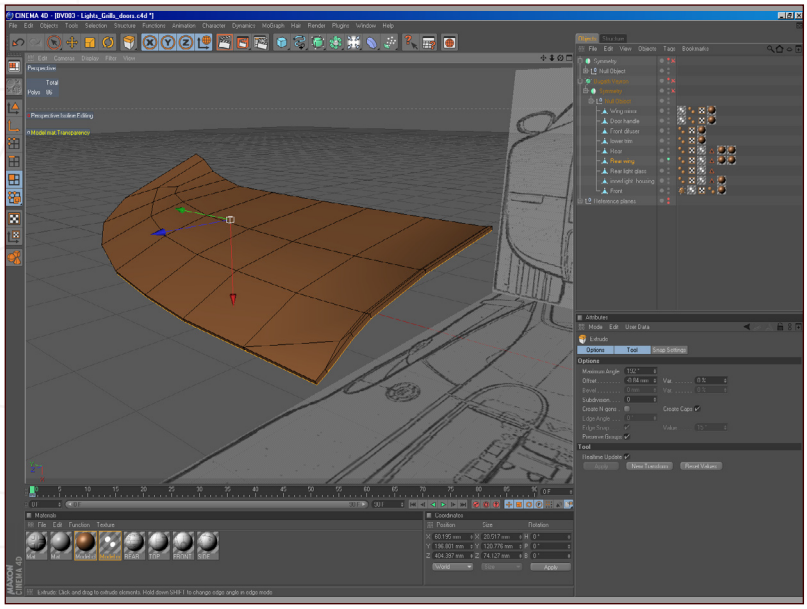


Fig 41

Select all of the polygons of the rear wing object and extrude them out/downwards. You will need to delete the inner most polygons for the symmetry object to work. (NB: I usually keep the symmetry/hypernurbs objects turned off whilst modelling as it takes up valuable computer resources. If there are strange anomalies with the mesh once turned on, make sure there are no polygons on the YZ axis that you've forgotten to delete) (**Fig41**).

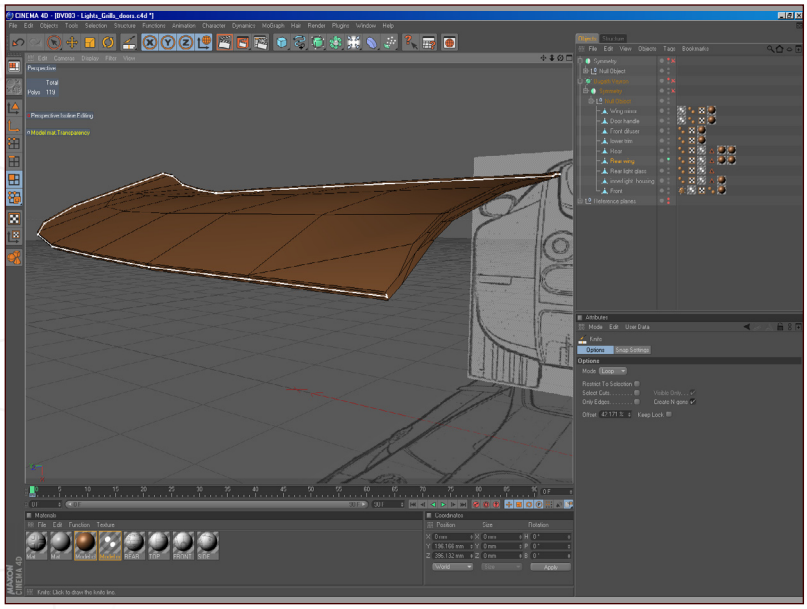
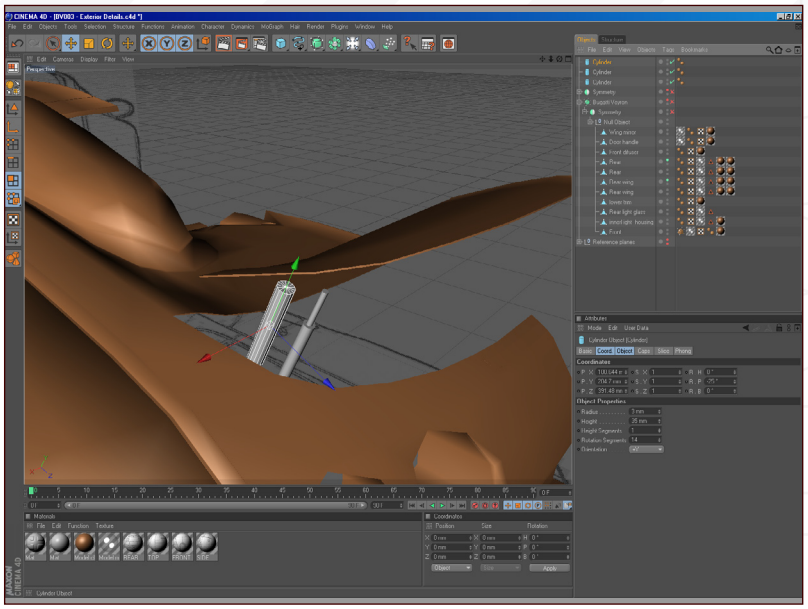


Fig 42

Now add two loop cuts around the outside of the wing to define the edges of the wing (**Fig42**).

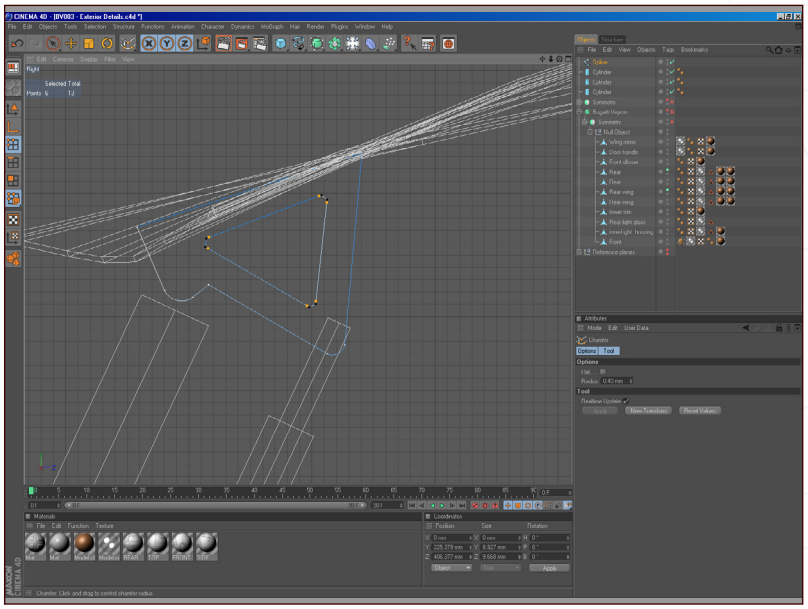
You will now need to roughly position the wing in the upright position, look at the reference images that you have sourced. Once the wing is in position add a cylinder with 14 rotation segments and place it beneath the wing on a -25° angle (this is an estimate). Copy the cylinder, move it backwards and make the radius smaller. Now make another copy of the smaller cylinder, move it along its Y axis and make its radius smaller to fit inside of the previous cylinder as shown in (**Fig43**).

Fig 43



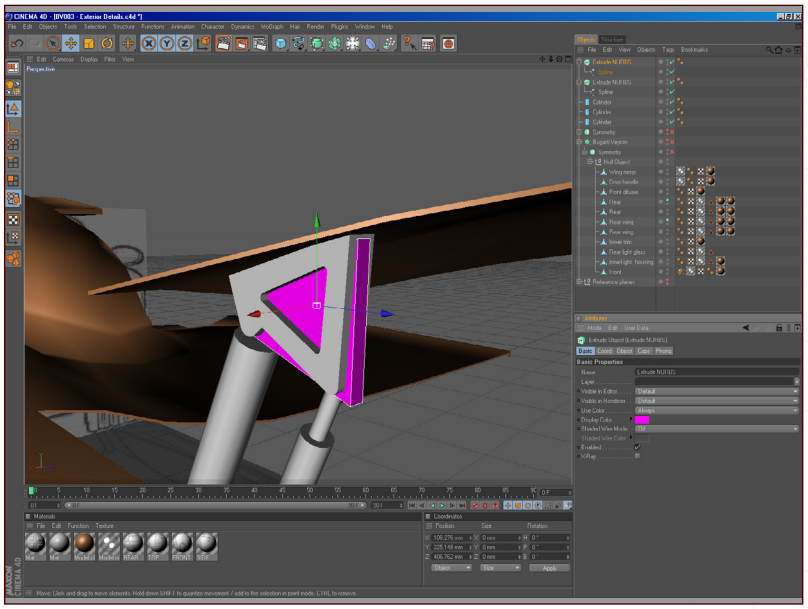
The wing is beginning to take shape and now we need to add the bracket that holds the wing to the uprights. First I create a basic linear spline profile of the bracket and then I Chamfer the corners. Remember to create the inside cut out - I created two splines, an inside, an outside, and I connected them together to form one spline (**Fig44**).

Fig 44



Extrude the newly created profile to a depth you'll need to judge from your reference. Now create another profile and extruded it (pink object), this will be the centre cut out to give the bracket separate arms to pivot the wing (**Fig45**).

Fig 45



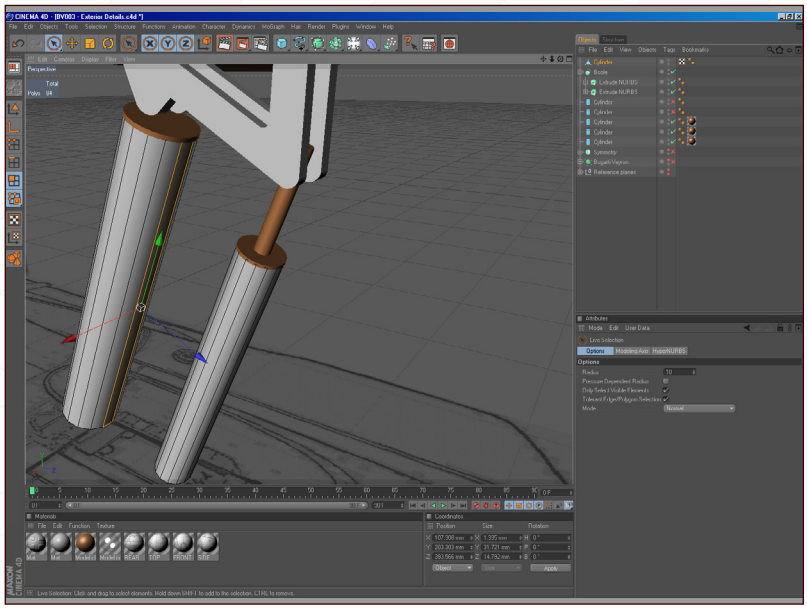


Fig 46

The wing arms need to be connected together, but before that I copied each of the two larger cylinders and made them into the thin, slightly larger radius cylinder caps that are at the tops of the arms. Now make the two large lower cylinders editable and connect them together to form one single mesh (**Fig46**).

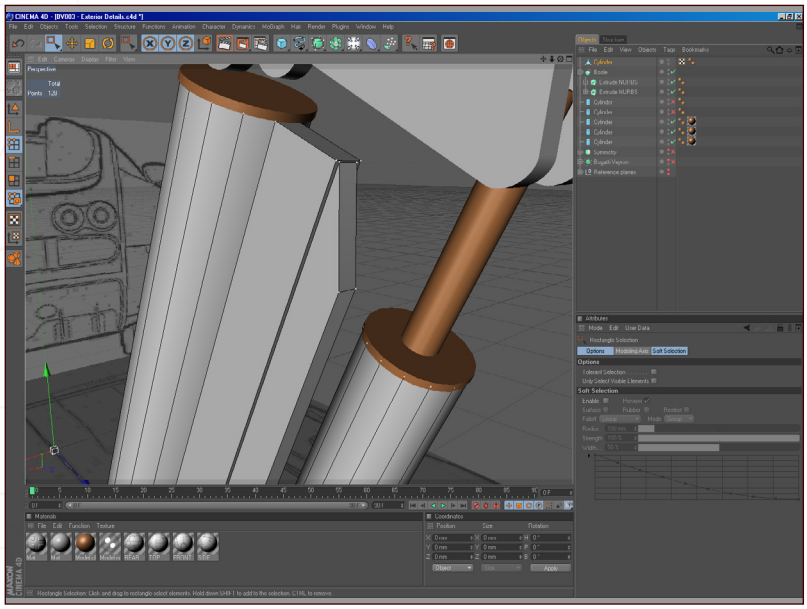


Fig 47

With the polygon selected in the previous image, extrude it out once, extrude inner, then extrude out again, and then move the points. Note that the points line up with the top of the lower cylinder (**Fig47**).

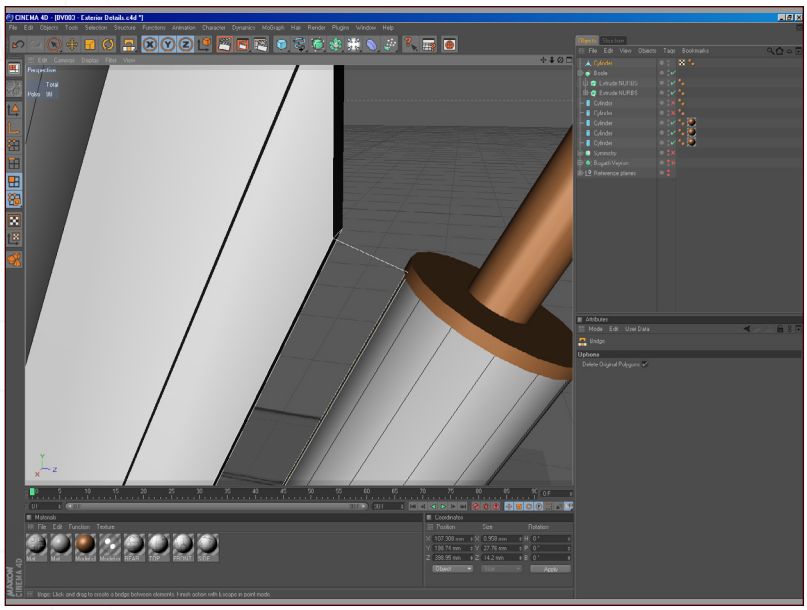
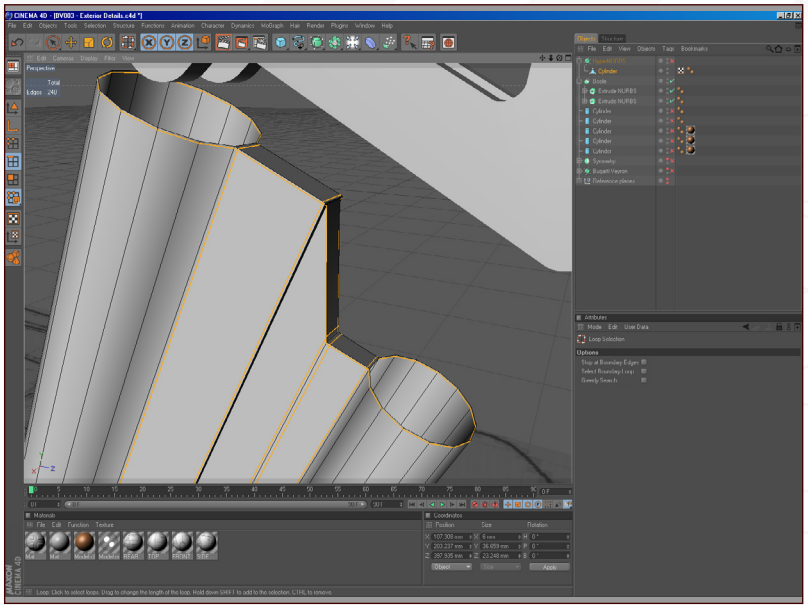


Fig 48

Now to connect the mesh together there is a quick trick with the bridge tool. Select both polygons, (you will need a close up of the two to force the viewport perspective to see both) now select the bridge tool and drag from one polygon to the other. Voila, the cylinders are connected together with one simple move and saves deleting polygons and bridging each polygon one by one (**Fig48**).

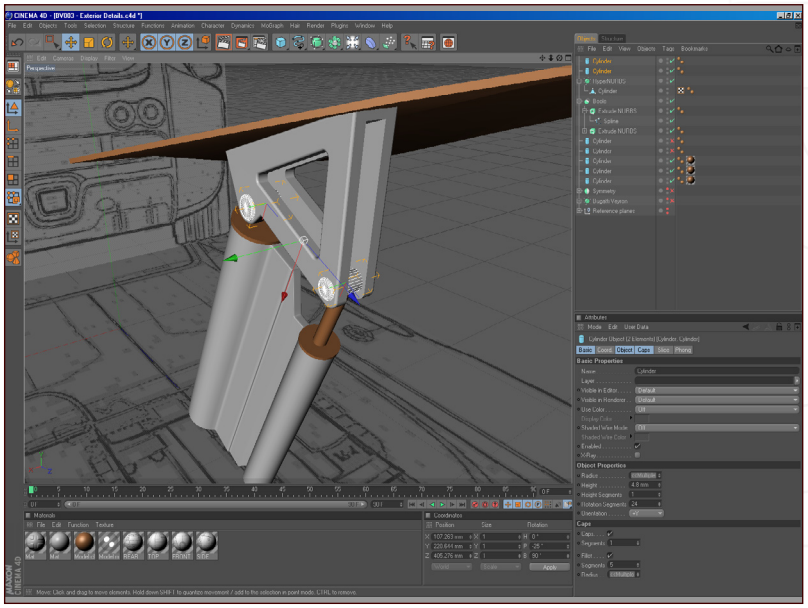
Adding a hypernurbs to the wing arms shows that they need more loop cuts to help define the shapes. First I delete the tops and the bottoms of both the cylinders, then add the loop cuts (**Fig49**).

Fig 49



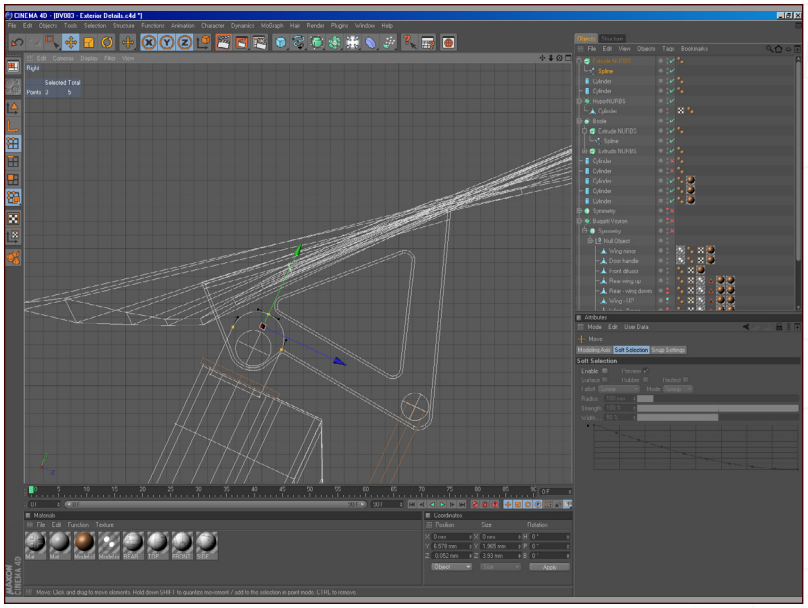
I add in two cylinders along the X axis and place them roughly where the pivots would be. Make these cylinders slightly longer than the bracket as they protrude either side of it. Both cylinders have filleted edges (**Fig50**).

Fig 50



The larger cylinder on the wing arm has a flat rounded anchor point which doesn't move. This is simply made by creating a spline rectangle and chamfering the top. The profile is then extruded to fit inside of the bracket arms (**Fig51**).

Fig 51



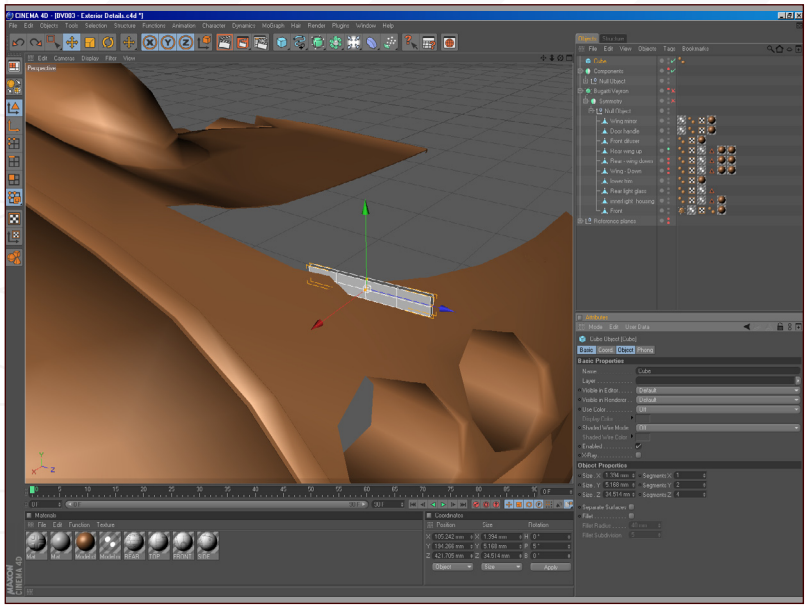


Fig 52

The main section of the rear wing is complete, now it's time to model the lower smaller wing that is hidden inside the body when the wing is retracted. Create a cube and position it roughly where it would be located when the wing is in the upright position. Roughly size the cube and add the segments (**Fig52**).

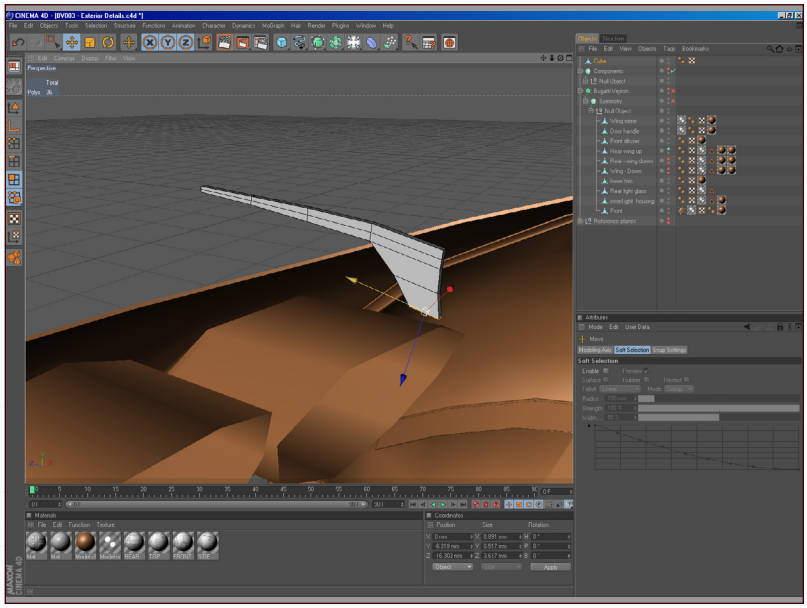


Fig 53

Make the cube editable and move the points around until you have the rough profile shape of the smaller wing. Extrude the polygon on the underside of the wing twice (**Fig53**).

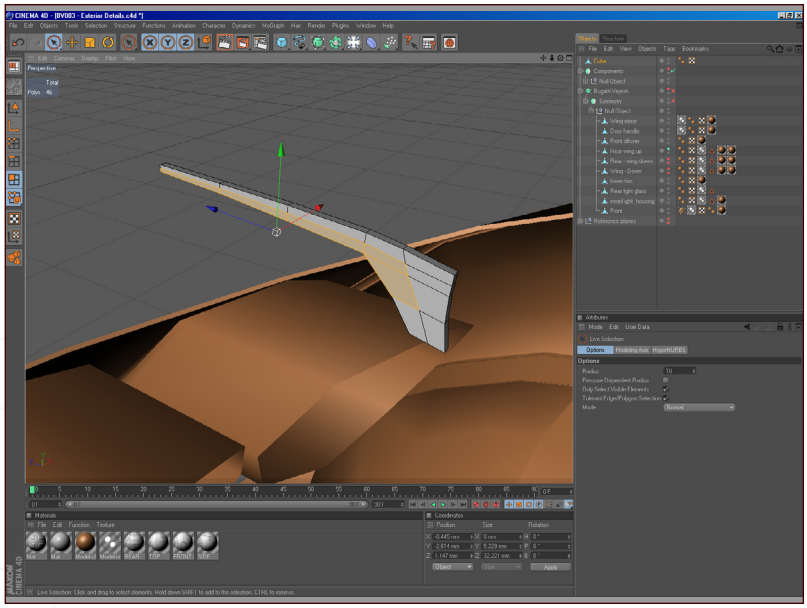
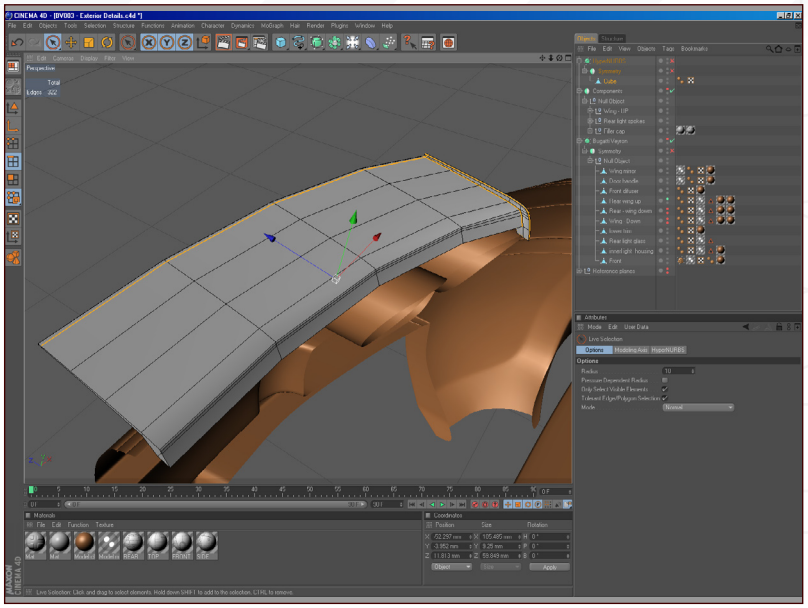


Fig 54

Now select the polygons and extrude them out several times until you reach the centre of the Y axis. Whilst extruding, you can move the polygons backwards along the Z axis to create the curvature of the wing. Delete the polygons once you have reached the Y axis then make sure you set the point value in X to zero for all of the points along the centre line (**Fig54**).

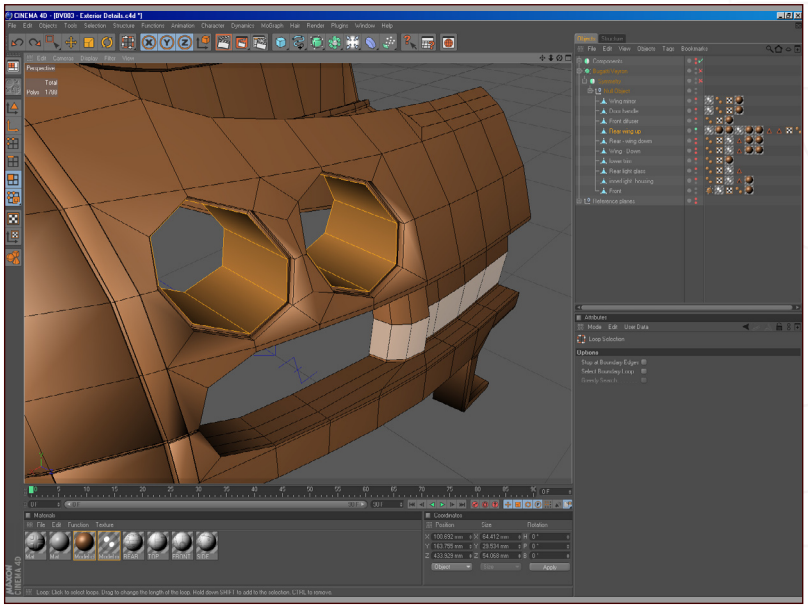
Now all that is left to do is add the loop cuts. Remember that you will need to select the edges on the centre line of open polygon objects, otherwise it won't create loops around the entire mesh (**Fig55**).

Fig 55



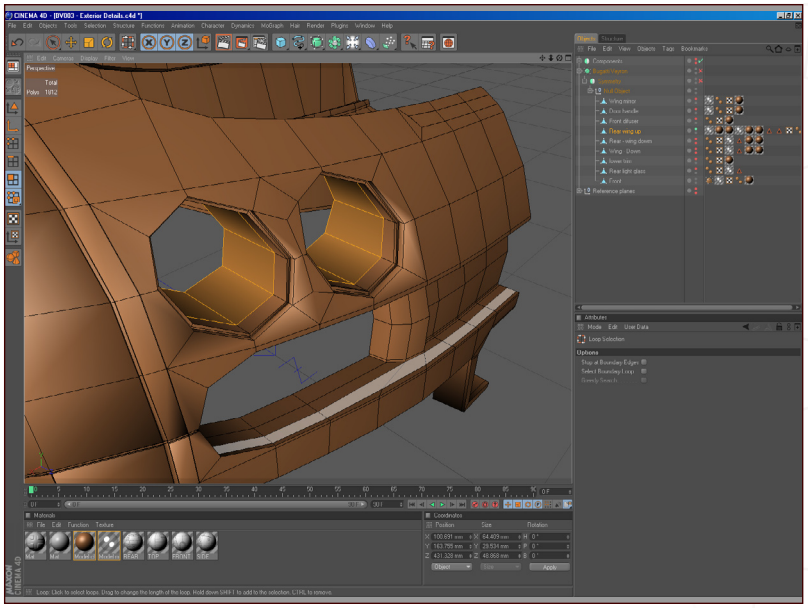
There isn't much detail on what is beneath the wing so I have quickly created two rear bodies. One is the wing in the down position which is a solid mesh. The other is the same mesh but with a hole extruded inwards to create the recess for the wing when it is in the up position. You should now be able to quickly extrude a recess for your wing to fit into (**Fig56**).

Fig 56



It's time to detail the rear lights and again you will need good photographic reference to capture all the right details. First I begin to select the polygons on the rear body of the car and extrude them in (**Fig57**).

Fig 57



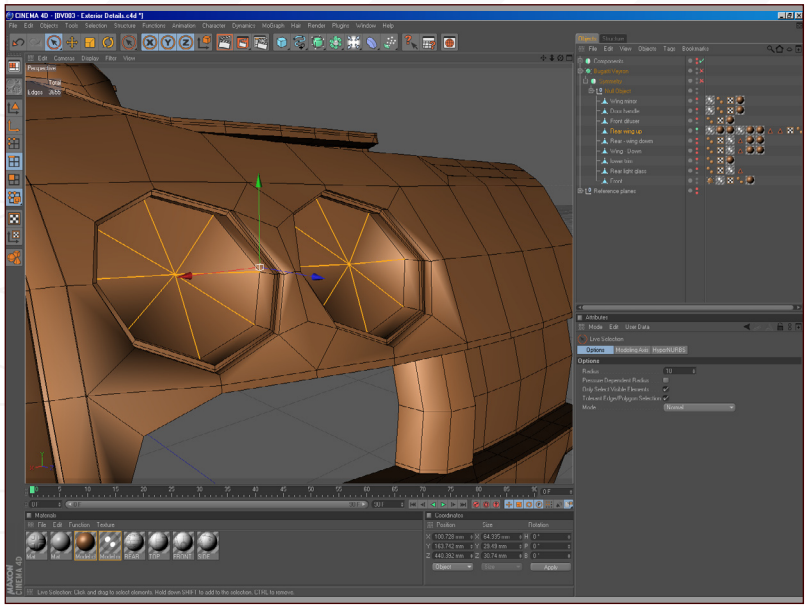


Fig 58

Now add a loop knife cut to the inside of the light recess where the rear of the lights will be and then delete the polygons (**Fig58**).

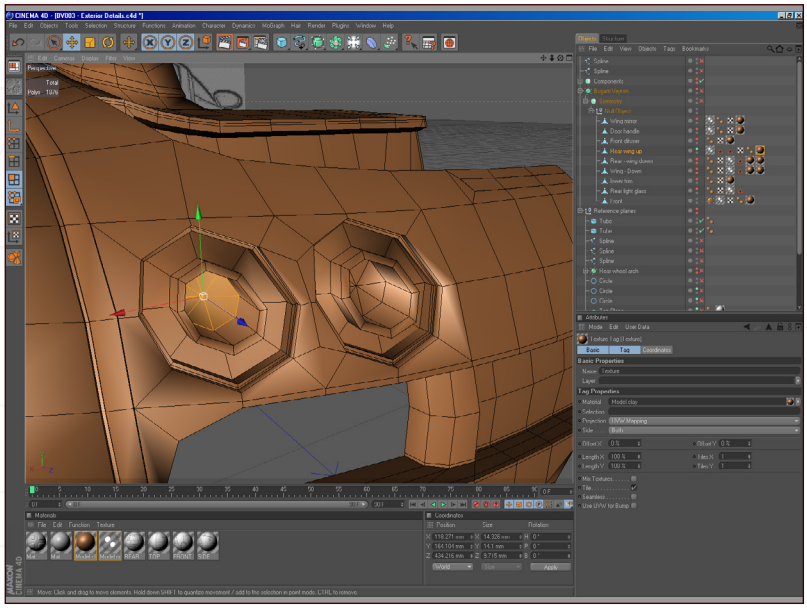


Fig 59

Close the polygon hole at the rear of both light recesses and line knife cut across the centre of the octagon from point to point. Make sure to tick the checkbox for visible only in the knife tool (**Fig59**).

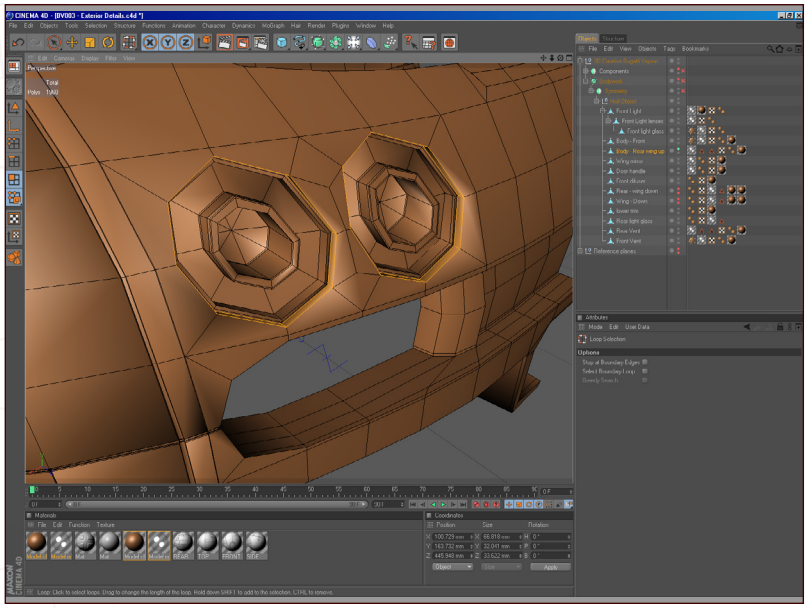
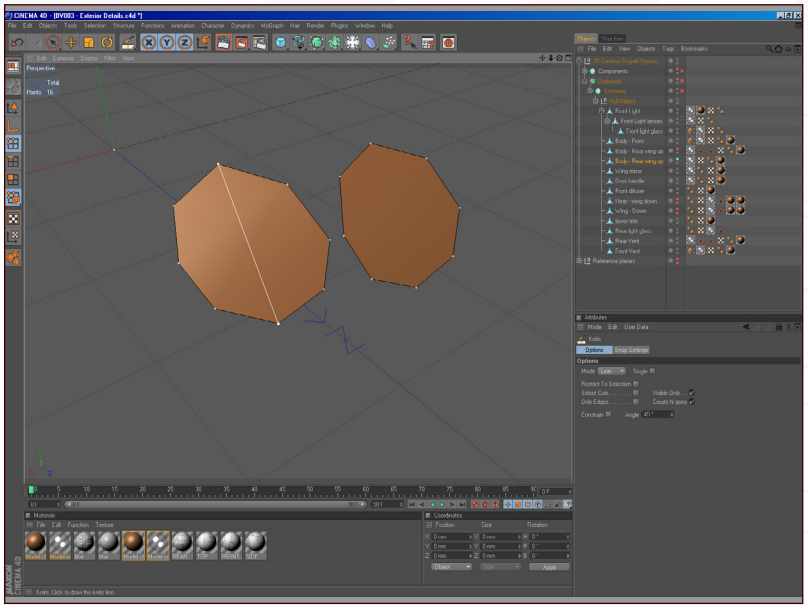


Fig 60

Select the newly created polygons and extrude inner, then extrude them outwards. Extrude inner again then extrude them inwards (**Fig60**).

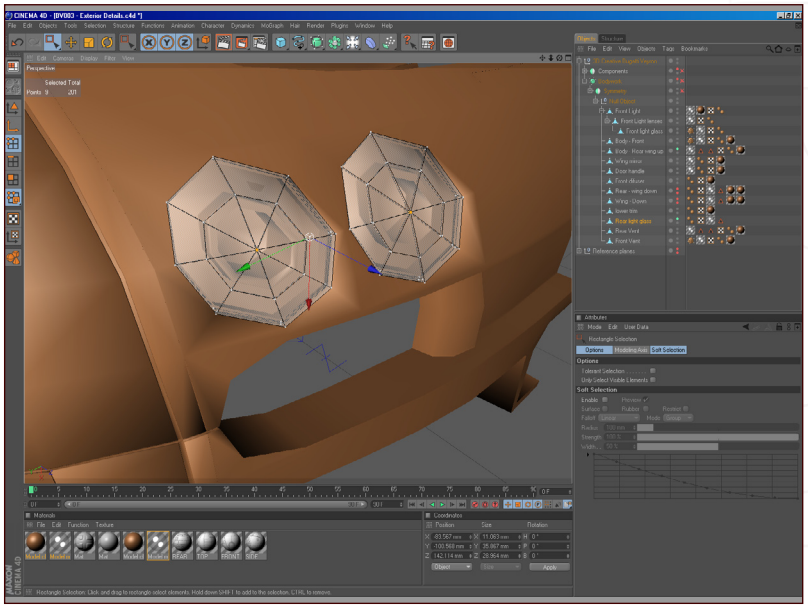
Now to create the outer glass for the rear lights, select the polygons and right click to split the polygon object (**Fig61**).

Fig 61



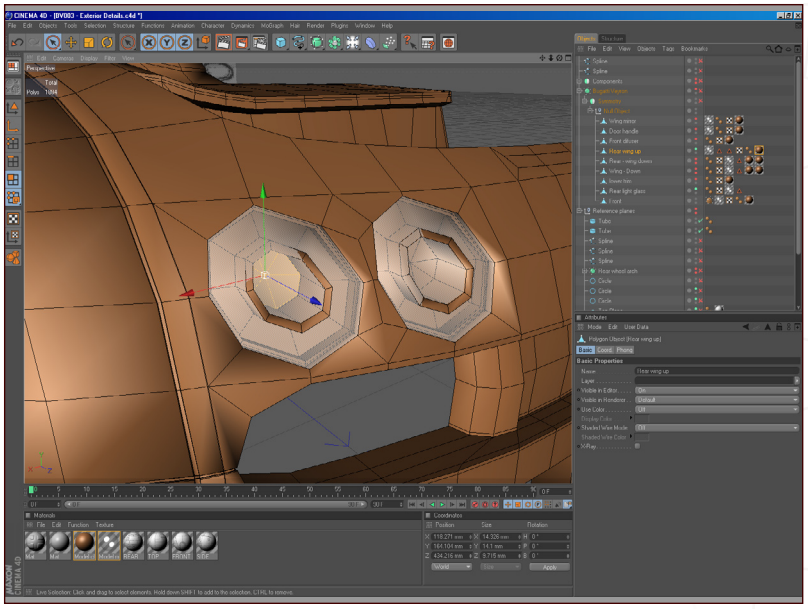
Close the polygon hole of the outmost edges on both light recesses. Now select the newly created Ngons and invert the selection to select the sides, delete and you should be left with this (**Fig62**).

Fig 62



The glass will need thickness, but first we'll need to cut up the surface to give us a centre point we can move to help match the glass to the curvature of the body. So line knife cut across the octagon polygon to match up each of the opposite points. You may have a few centre points, but you can simply select them all and weld them together. Once you have cut up the ngon you can select all of the polygons and extrude inwards twice so that it butts up with the inner recess (**Fig63**).

Fig 63



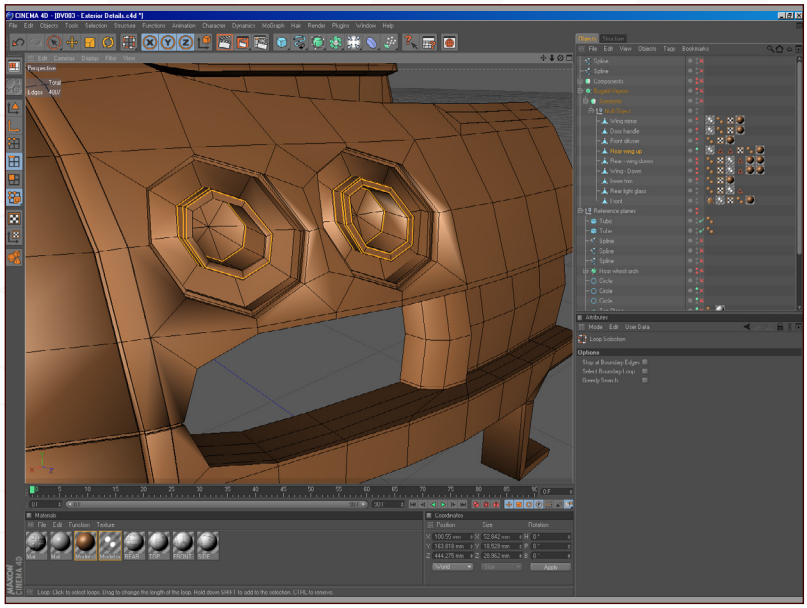


Fig 64

You may have the inner parts of the lights protruding through the glass, if so then now you can shift the offending points back and align them to the inside of the glass (**Fig64**).

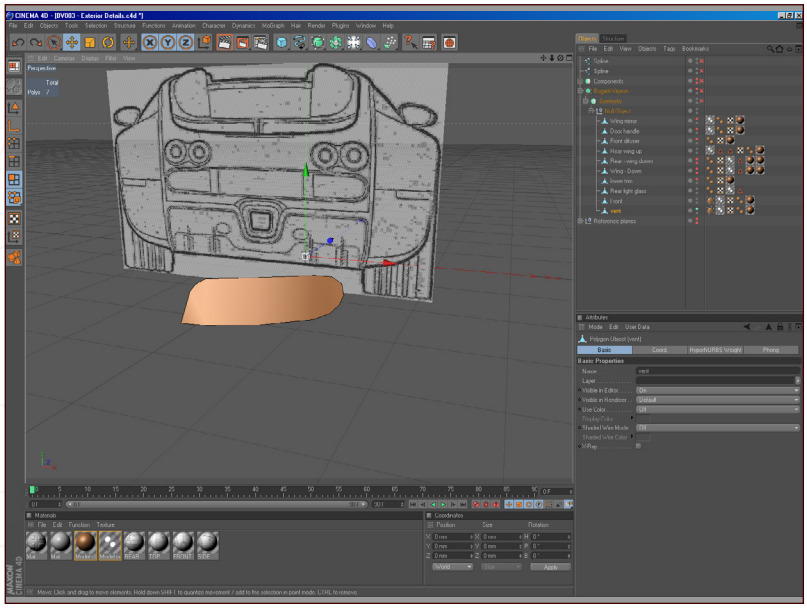


Fig 65

To finish off the rear lights I've added loop cuts to define the edges. The rest of the light details will be added in the materials stage (**Fig65**).

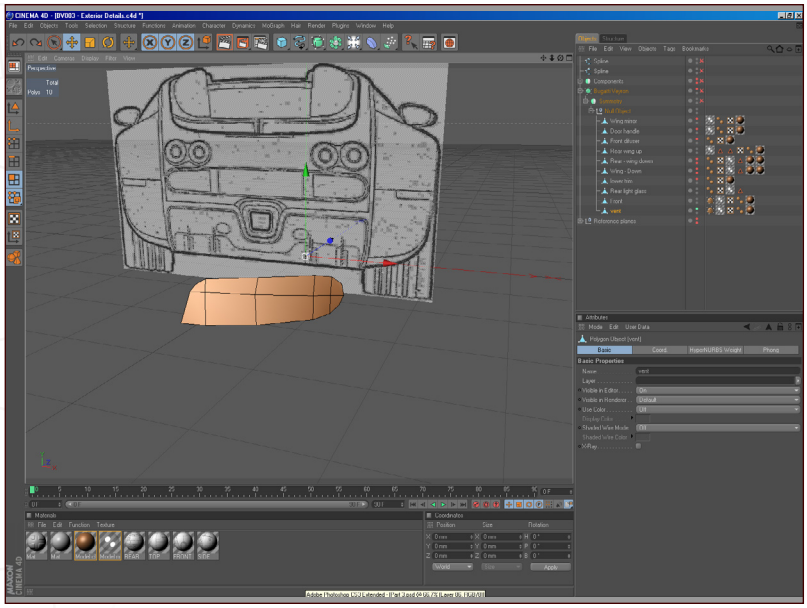
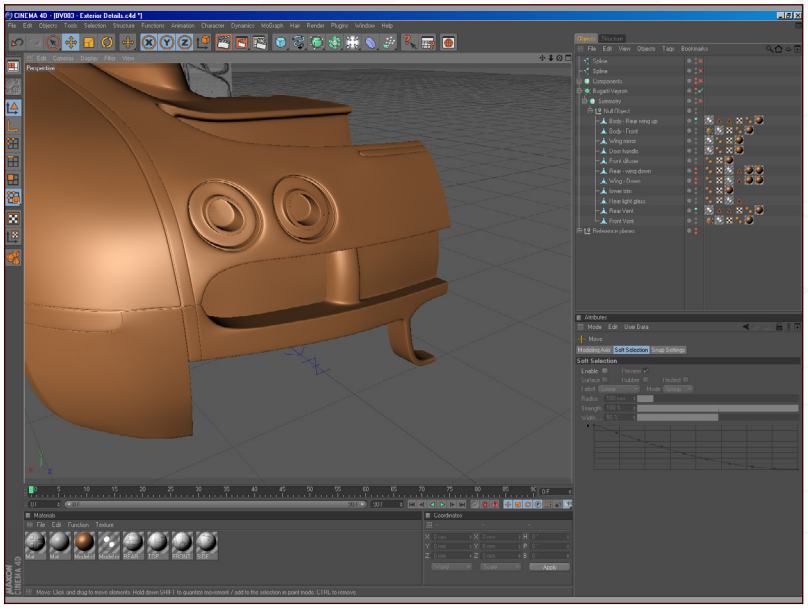


Fig 66

The vents are really easy to create especially as the details will be in the materials section, so all we need to do is create some polygons to apply the materials to. First I select the front body and close the polygon hole on the large vent, then I split it to create a separate polygon object (**Fig66**).

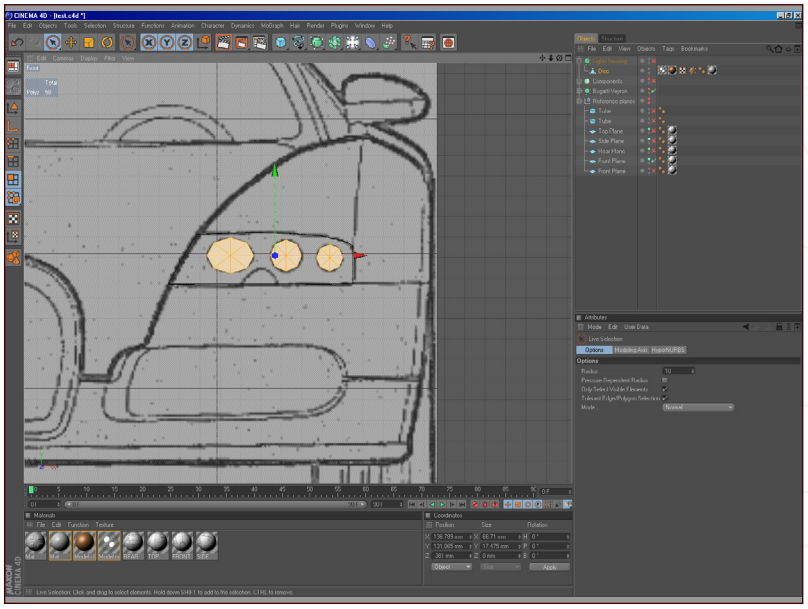
By using the same process as the rear light glass you can simplify the shape of the vent near the cutlines on the right side, and then begin to line cut from point to point. Make sure the points overlap the vent hole and that there are no gaps (**Fig67**).

Fig 67



The same process is carried out for the rear vent (**Fig68**).

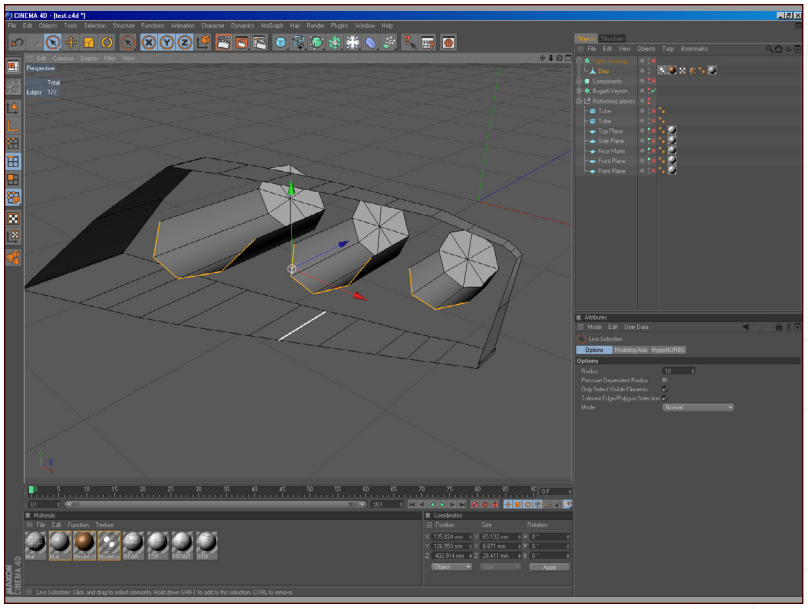
Fig 68



I have left the front lights for the last part of this tutorial section as they are very intricate. I've tried to make this as simple as possible, if you do get stuck feel free to email me and I will try my best to help you solve it.

Firstly I selected the inside loop of polygons of the light recess on the front body and split them to create a new object called 'front light housing'. Then I added three disc objects. Each disc has one disc segment and 8 rotation segments. They are all the made editable and the larger disc is scaled along the X axis to fit the light shape of the plans (**Fig69**).

Fig 69



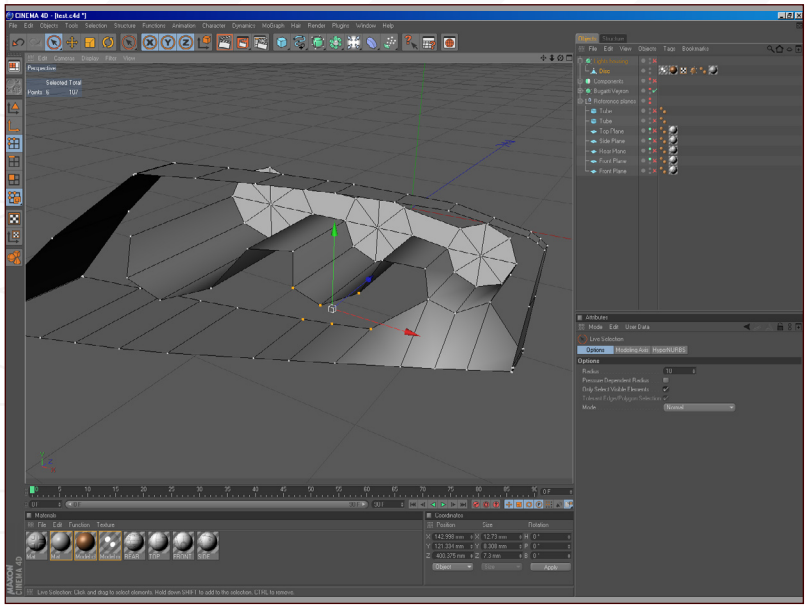


Fig 70

Now select all three discs and the front light housing and connect them together to form a mesh as shown here. The lower 4 edges of each of the polygons are edge extruded and then slightly moved forward in the Z axis (**Fig70**).

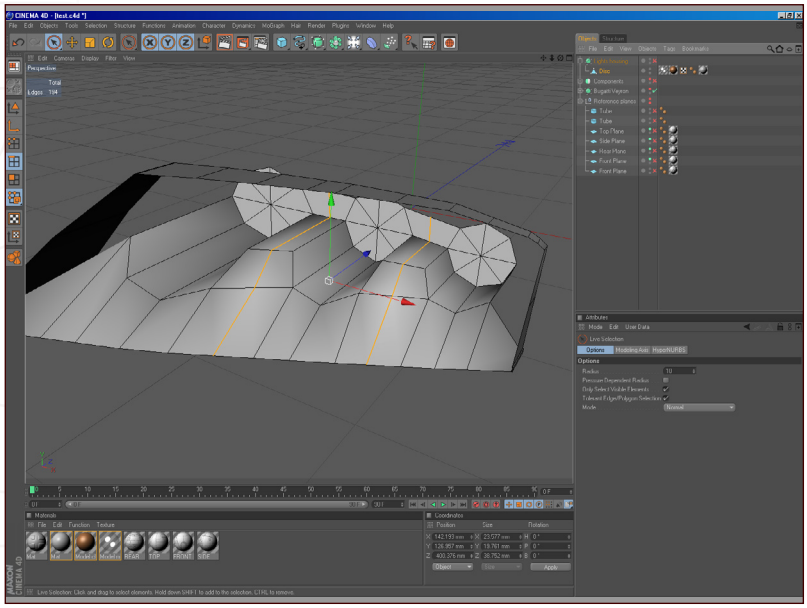


Fig 71

We need to now join the disc polygons together and weld the newly created polygons to the outer rim of polygons (**Fig71**).

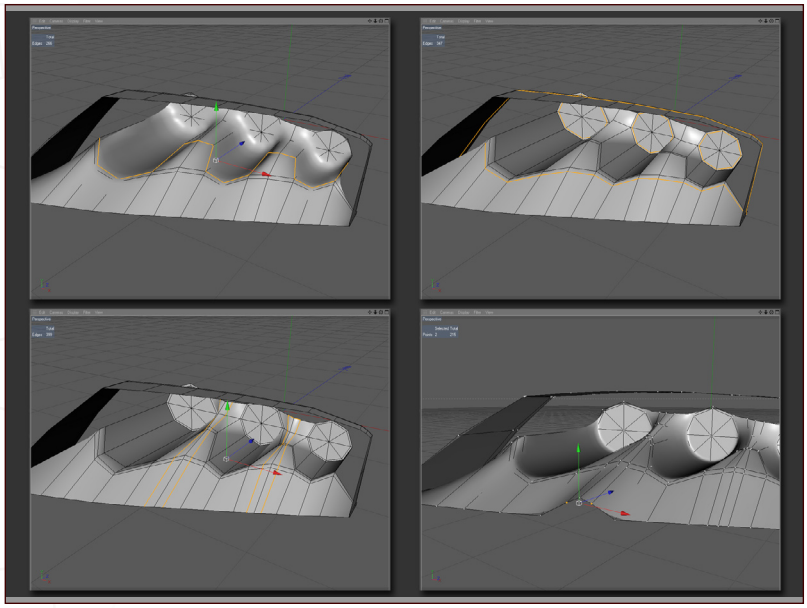
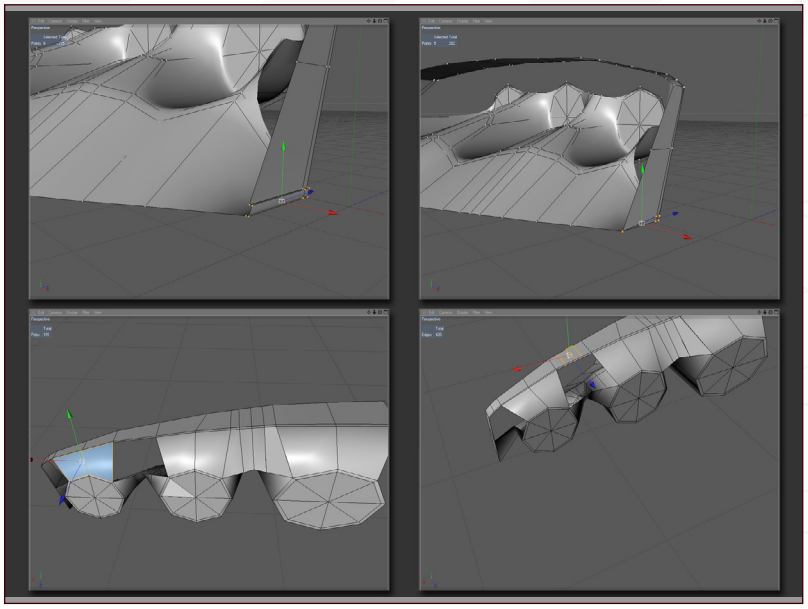


Fig 72

Loop cut where shown. This will help us shape the sweeps and to aid in rounding them (**Fig72**).

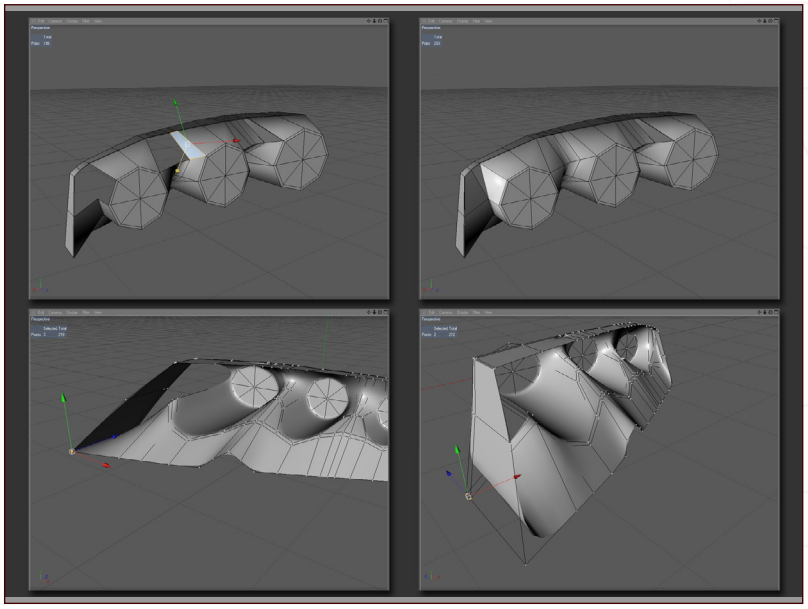
We need to create more loop cuts to help define the hard creases that flow around the lights. The next few images show the locations of the cuts and begin to shape the triangular object found at the front of the light cluster. [NB: All four panel figures read from top left to right, then bottom left to right] (**Fig73**).

Fig 73



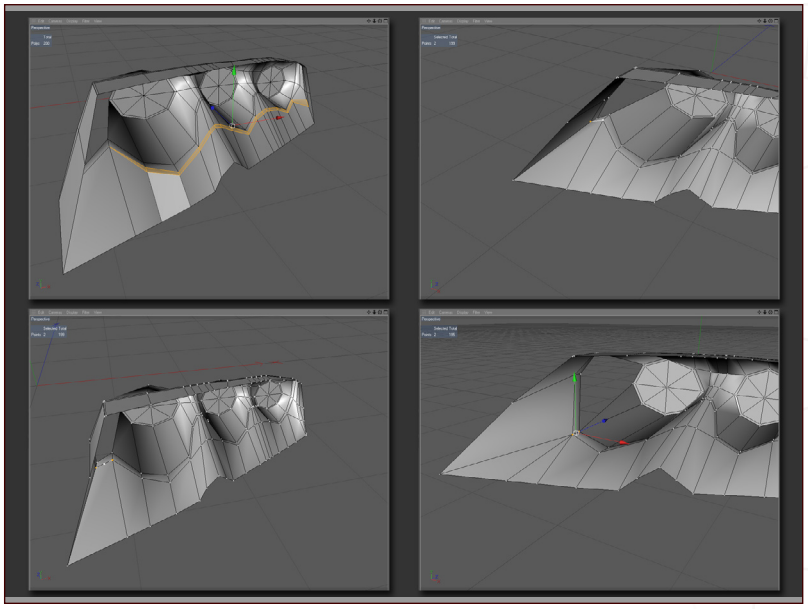
The points highlighted are to be welded together to simplify the mesh and to help us connect polygons together. Adding more loop cuts where needed give us edges that can be bridged together to enclose the lights (**Fig74**).

Fig 74



Again we will need to add more cuts to connect polygons from the discs to the outer polygons. So too will we need to simplify the outer mesh in the inside corners (**Fig75**).

Fig 75



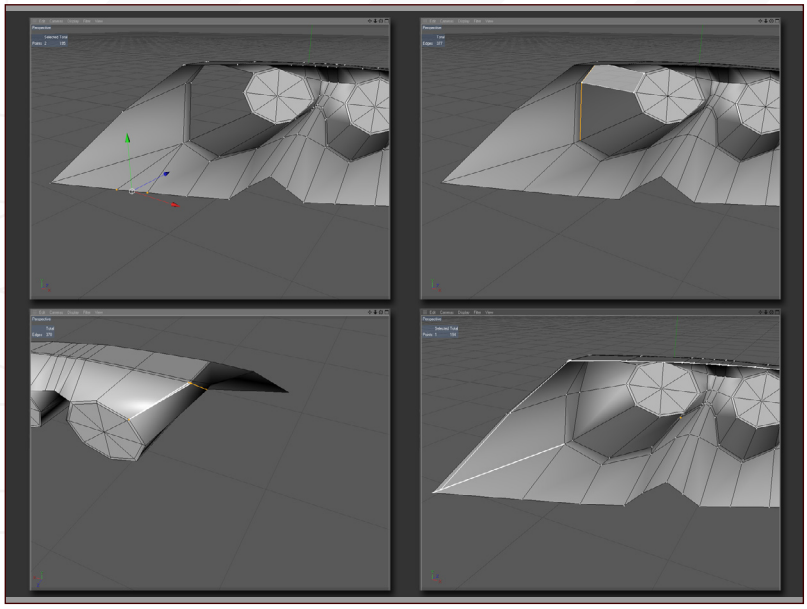


Fig 76

When the hypernurbs is enabled I've notice that there are some anomalies in terms of the polygon flow from the half circular creases. To rectify this we will need to weld together the highlighted points. In addition to fixing the unsightly seam we will need to weld in the inner polygons to make them taper in towards the lights. Remember when welding that you may make triangular polygons, which will be needed to be converted to quads otherwise it can affect the hypernurbs smoothness, but there are some cases where it's possible to get away with using triangular polygons (**Fig76**).

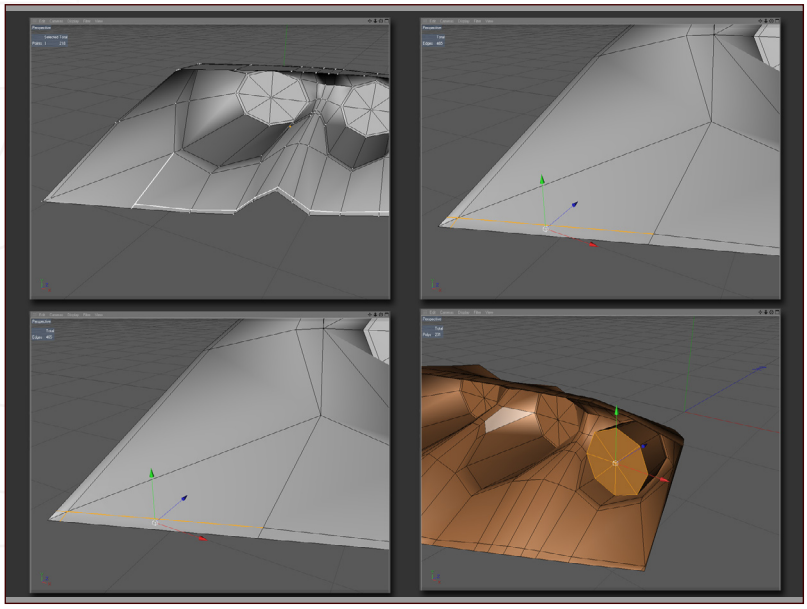


Fig 77

Yet more cutting, welding and positioning of points. Earlier we removed the points in the corners of the outer polygon ring to simplify the mesh. Now we will need to add loop cuts to define the corners and pull the hypernurbs mesh back to it's original place, thus making sure there will be no gaps between the light housings and the body.

Adding definition and beginning to model the light bulbs are shown in the next couple of images. A series of loop and line cuts help define the edges of the light housings. Once completed, select the polygons at the centre of the smallest disc and extrude out (**Fig77**).

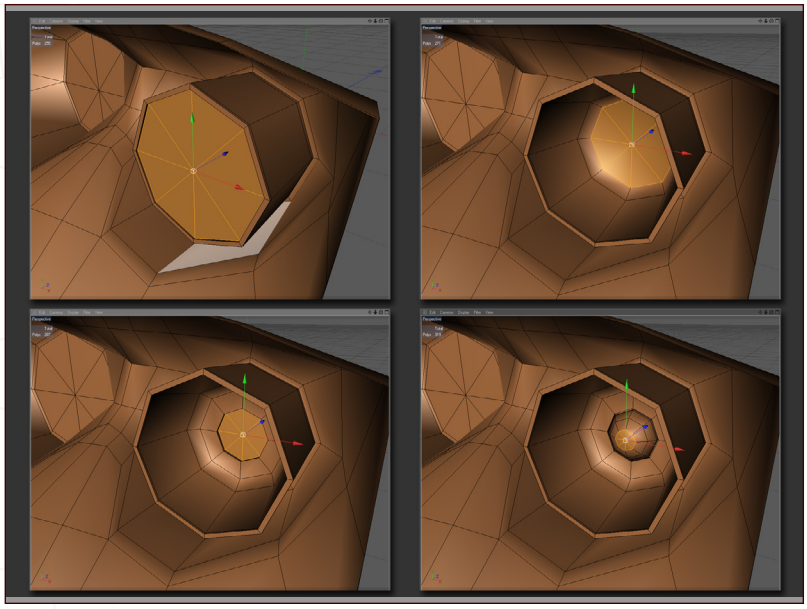
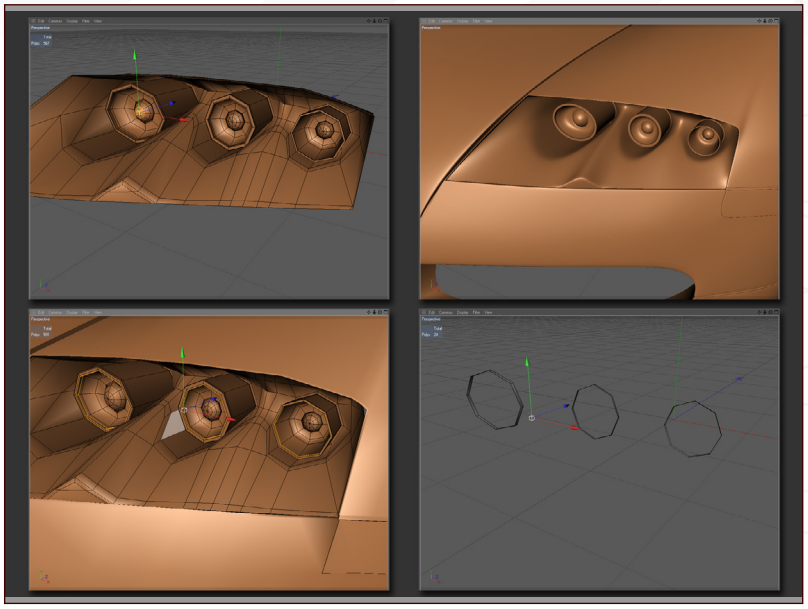


Fig 78

To create the light well all you will need to do is quickly switch between three tools, that is extrude polygons out/in, extrude polygons inner, and the scale tool. From the close up screen shots you should now be able to re create it. Carry on to the next figure if you can, if not then here is what you do. Extrude the polygons out slightly – this will give the outer edge definition later. Extrude polygons inner, extrude in slightly, and extrude in again. Extrude in again slightly and scale the polygons down. Now extrude inner and then extrude inwards. Extrude inner slightly then extrude out slightly. Keep extruding out and scaling the polygons in to form the domed bulb shape (**Fig78**).

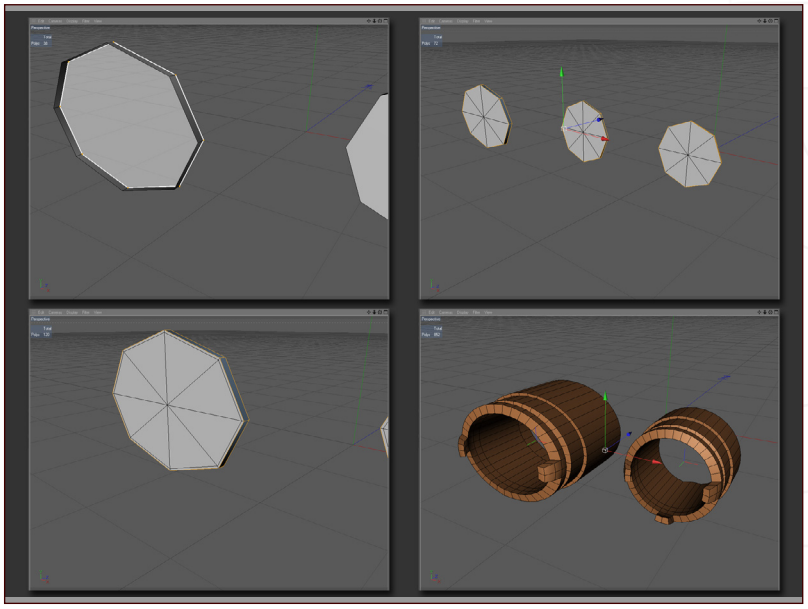
You will need to continue this process for each of the light wells and hopefully it should look like the ones seen here. The triangular section at the front was bridged together then I line cut just inside to give it definition. To make the glass for the lights I've used the same process that was used on the rear lights (**Fig79**).

Fig 79



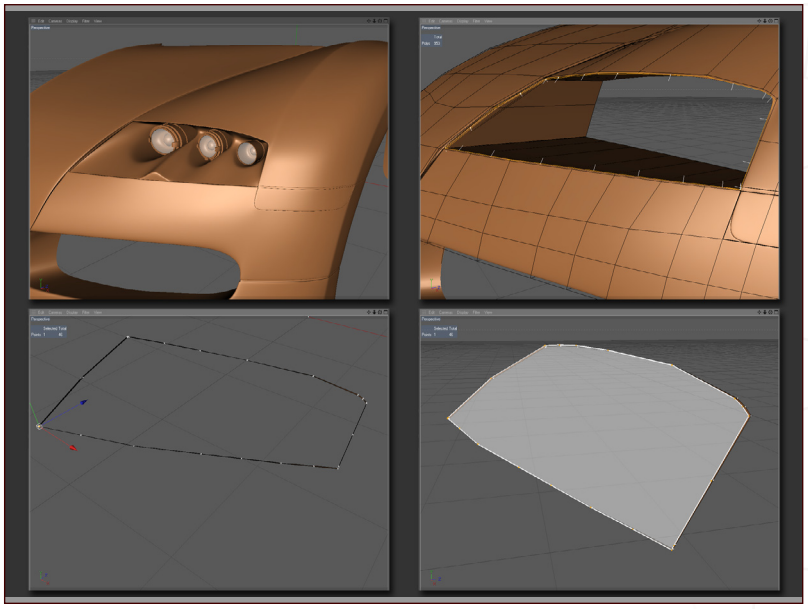
Loop selecting the polygons and splitting them to form a new object gives us a starting point for the light bulb glass. Close the polygon holes and line cut between the points to create the glass. I've extruded the outer polygons to make sure there aren't any gaps between the glass and the well. **Fig80** shows the extra details I've added around the light bulbs, which are just three cylinders made editable and extruded/scaled to give more detail to the final light wells.

Fig 80



Now we need to create the glass for the main section of the light cluster. Again using the split object command used earlier I loop select the polygons just inside the light recess of the front body. This piece of glass does need a little bit more attention as we'll need to simplify the loop of polygons before we begin (**Fig81**).

Fig 81



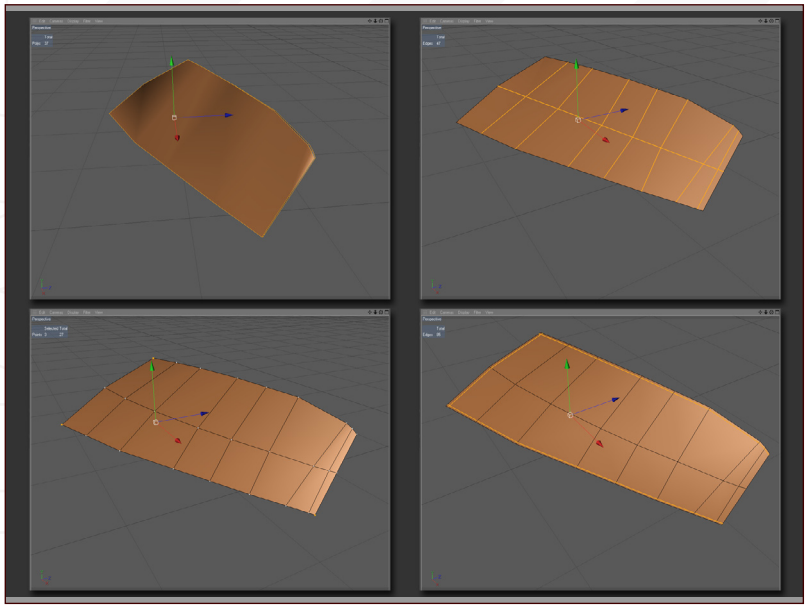


Fig 82

Close the outer polygon hole of the loop, and then delete the out loop of polygons. You should end up with the outside surface of the glass. We'll need to line cut across the surface and move the centre points to match the curve of the body. Remember polygon flow is very important even on such a small part. In the corners of the surface there will be some tightly placed points, these can be welded together to help simplify the knife process. Add knife cuts if there aren't enough equal points between the top and the bottom (**Fig82**).

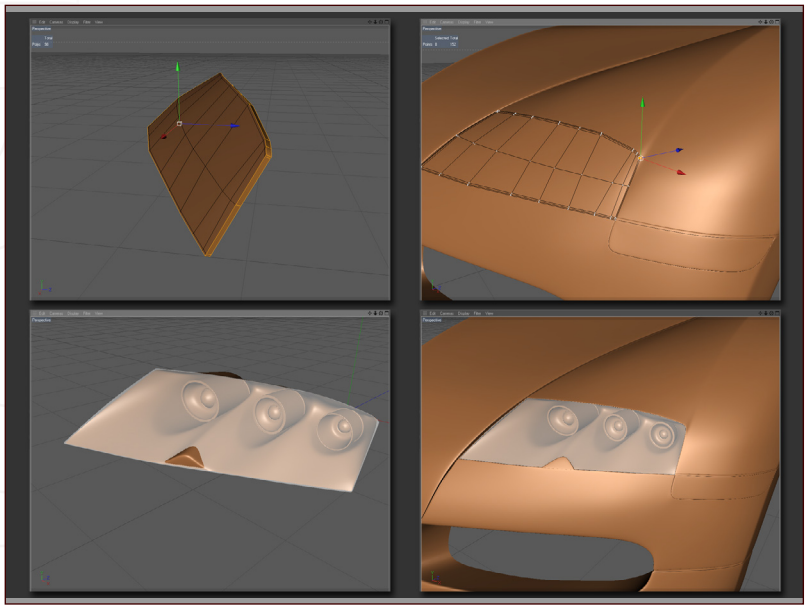


Fig 83

Once you have the correct shape you will need to extrude inwards making sure the caps checkbox is ticked. Make the front body visible and make sure there are no gaps, you may need to move points slightly and add loop cuts just inside the edges. With the glass finished you can check to see if anything protrudes, if so just align it using the glass as a guide (**Fig83**).

That concludes this part of the tutorial and in the next part of this sequence I will be covering how to model the engine, wheels rims, tyres with tread, and completing the exterior of the car. This is the section where the car takes shape and adding wheels will ground the whole model.

BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

Tutorial by:
EMLYN DAVIES
For more from this artist visit:
www.cr8ivity.co.uk
Or contact them:
design_em@mac.com

Bugatti Veyron
car modelling series

lightwave

The series will cover an in-depth and comprehensive guide to modelling the amazing Bugatti Veyron car, from start to finish, and will focus on the key techniques and stages involved in building the chassis, as well as details such as the windows, lights, vents, petrol caps, engine parts and so on. We will then move on to creating the wheels, including tyres and hubcaps, before going on to building and incorporating an interior, namely the dashboard and seating. The series will proceed with a section on creating and applying materials for the numerous parts of the car, such as the paint work, chrome, rubber and glass, before concluding with a tutorial devoted to setting the scene for a finished render. The final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This series aims to show a comprehensive guide to creating a finished car for people new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but does endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
MODELLING THE CHASSIS - BASICS

Issue 031 March 2008
MODELLING THE CHASSIS - DETAILS

Issue 031 March 2008
LIGHTS, RADIATOR GRILL & VENTS

Issue 032 April 2008
WHEELS, TYRES & RIMS

Issue 033 May 2008
INTERIOR

Issue 034 June 2008
THE MATERIALS & FINISHES

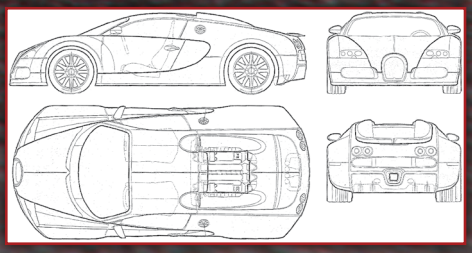
Issue 035 July 2008
LIGHTING SET UP & RENDER

ENJOY ...



Due to circumstances beyond the artist's control, this part of the Bugatti Veyron Car Modelling Series will not be available until later this month. As soon as the tutorial is ready for release, we'll upload it to our server and we will make it downloadable from the download link above **Note:** The link will be inactive until the tutorial is ready; as soon as the tutorial has been uploaded the link will become active!! Thanks for your understanding. Ed.

Blueprints available here:



www.the-blueprints.com

Bugatti Veyron
car modelling series

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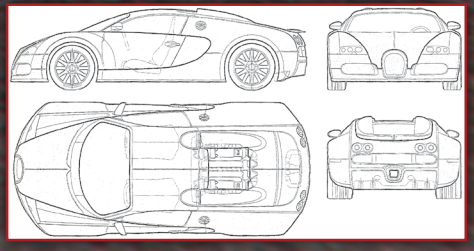
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BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

Hello and welcome to the third part of this series! I hope you have all enjoyed it so far and have managed to follow along so far – congratulations if you have, because part 2 was a monster! I'll try and keep things a bit more to the point as you should know my workflow by now. So, buckle up and let's get started!

We must finish up the exterior panels before we move onto the accessories, so let's finish these off first. Make sure all central verts are snapped to the centre of the grid, so there will be no gaps when we smooth. Mirror each of the pieces that lie along the centre of the grid. Make sure to use a low merge threshold or you will ruin the bevels that were applied and make sure you cleanup each of the pieces along the merge – I found that my bonnet had a big lump along the centre, which was easily smoothed out using the techniques learnt already. We will not mirror the back panel yet because we still need to model the holes for all of the back lights.

To create the ridge running along the centre of the car is really simple. I'll walk you through the creation of the ridge on the roof and by using the same techniques you should be able to create the ridges on the other panels with no problems. Select all of the central edges of the roof and apply a fairly thin bevel (I used an offset value of about 0.1) – this is to give us the base of the ridge. Then split in between these new edges and snap the split to the centre of the grid (in the Z direction only, in my case). If you have been following closely now deselect the first three edges at the front and the edges at the back up to, but not including, the roof bevel. If you haven't been following closely, the aim is to have a raised ridge that tapers off as it gets closer to the front window – just check your references. Tug these edges up slightly – not a massive amount though. Again, select all of the central edges and give these a small bevel (about 0.2 in my case). Merge the front 3 pairs

Fig 01

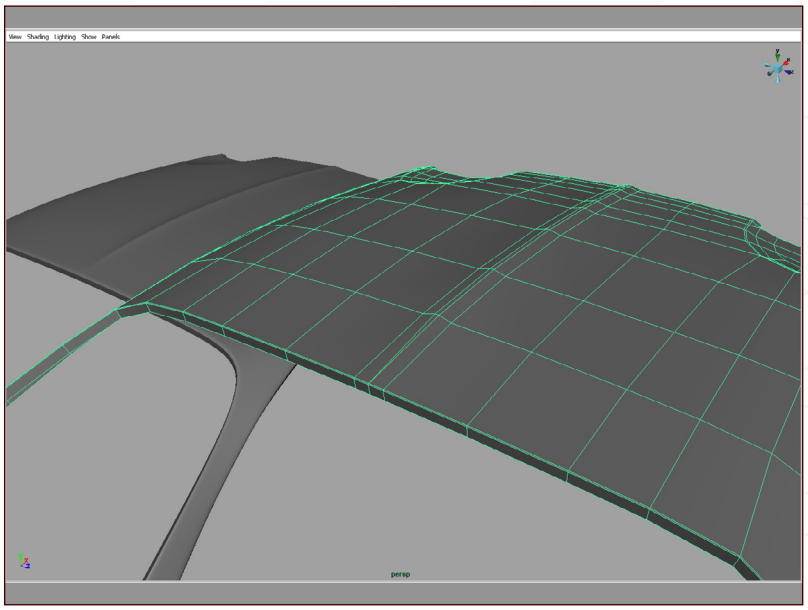


Fig 02

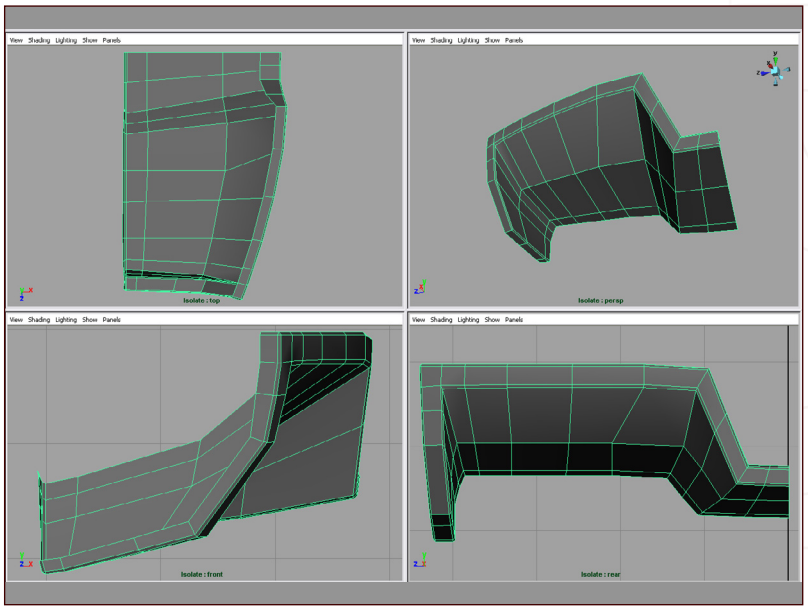
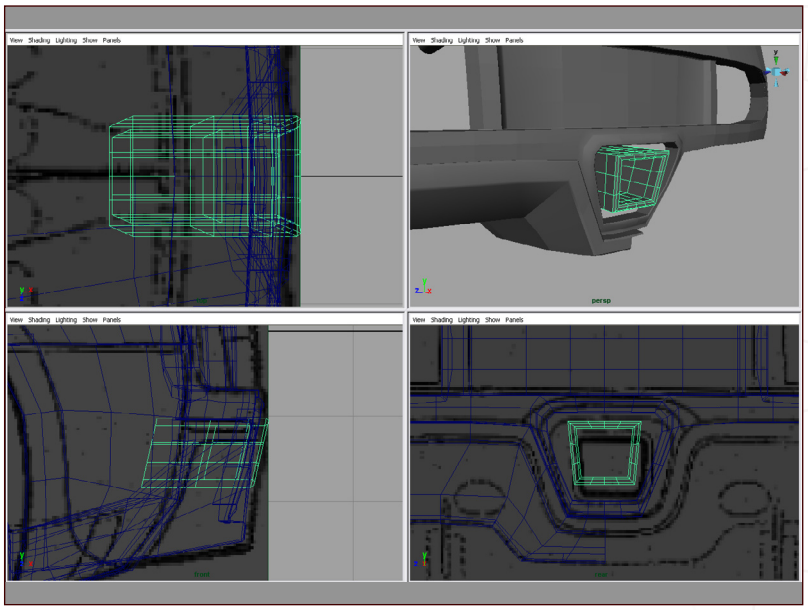


Fig 03



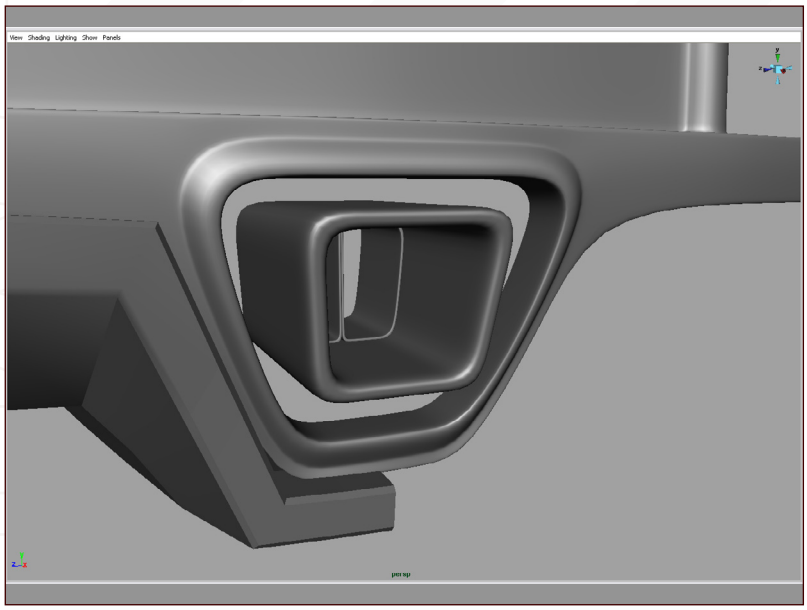


Fig 04

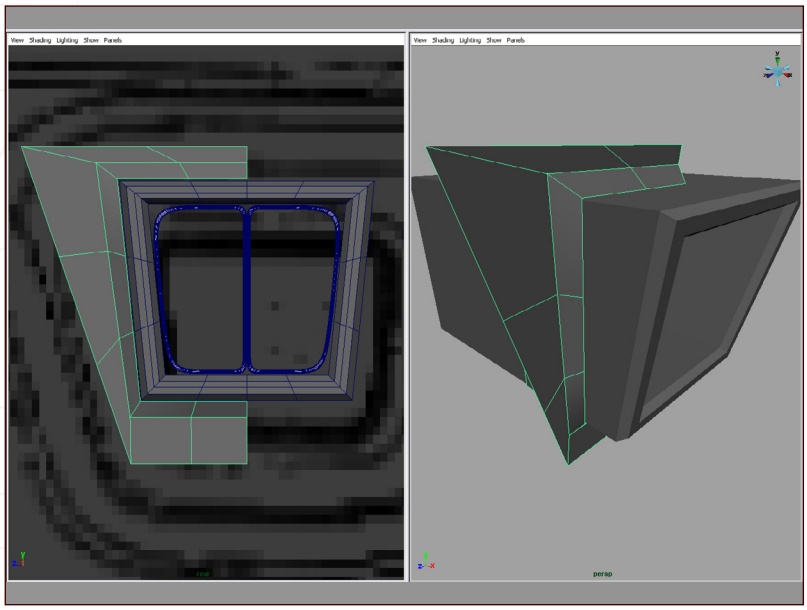


Fig 05

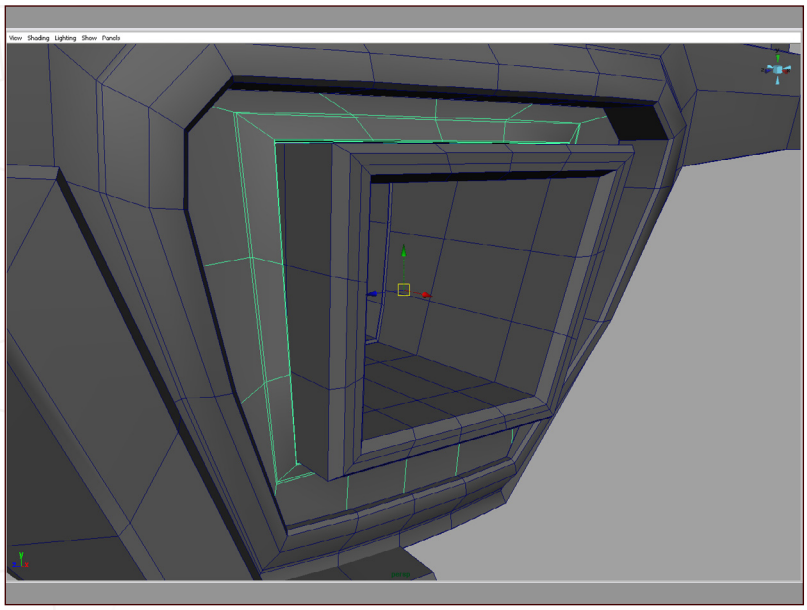


Fig 06

of verts together – so you are left with 3 verts instead of 6. **Fig01** shows how the roof mesh should look at this point, both smoothed and unsmoothed. Following this idea you should be able to create the other ridges.

Over the course of the next two parts we will work from the back of the car to the front adding the accessories. So by the end of the next part we will have a completed car exterior.

So let's begin by modelling the rear fins which encase the exhaust and wrap under the back of the car. The start of this piece is very simple; just trace the outline of the fins beginning with a poly plane and extruding out from this. Once the outline is completed, we can extrude in under the car and connect the planes together (**Fig02**) followed by a bevel of the edges.

Let's move onto the exhaust now. Create a cube and place it in the hole already created for the exhaust – the end of the exhaust has a slight slant and also juts out from the body a bit. Extrude the front and back faces uniformly and delete the faces you have selected to create the hole. Bevel the front edges that run around the exhaust and delete all of the backfaces as these will never be seen – make sure the back verts are pulled right into the body though. Make a few splits around the exhaust to keep the bevel nice and sharp and to stop our shape becoming too circular when smoothed (**Fig03**). I believe that the Veyron has a total of four exhausts (correct me if I'm wrong) and two of these are encased in the object we have created. These inner exhausts were created in a similar fashion to the exhaust casing, so by using your references you should end up with an exhaust looking similar to **Fig04**. To complete the exhaust, we just need to add a plate that houses the exhaust case and sits behind the rear panel. Start with a plane with 1 subdivision in both width and height and cut out a hole in the middle that outlines the exhaust casing. Extrude the hole backwards to give this piece some depth and add some splits to stop this piece becoming too circular when smoothed. This plate has a

lip that juts out towards the exhaust casing, so split some new edges around this plane and tug out the edges that surround the exhaust casing – you should have something like **Fig05**. Bevel the edges that surround the exhaust and the ones that outline the lip on the exhaust plate. Make sure that the plate sits behind the back panel and, if liked, give the back panel some depth (**Fig06**).

Moving up the car leads us to the rear indicator lights. This part shouldn't be too difficult. To make this part a bit simpler, I would strongly suggest removing the bevelling we have already applied to the lower rear fender piece – just make a note of which edges were originally bevelled because we will re-apply the bevel at the end. Add the highlighted splits (**Fig07**) to outline the indicator light and redistribute the verts to stop any pinching – outline the right side of the indicator with the edges immediately to the right of the light. Make sure to use curve snapping to keep your mesh nice and clean. Also keep checking your smooth mesh, because although the polys look messy, the smooth version looks fine. Select the faces of the indicator and extract them. Extrude the edges of the lower rear fender to create the hole for the light and snap the verts together. Select the edges that were originally bevelled and also the edges around the light (**Fig08**) and bevel them. Clean up any resultant tri's with the Merge Vertices to Centre tool. Grab all of the edges running down the centre of the light hole and bevel them to create 2 lines of edges running down the centre of the light hole. Redistribute the verts so that they are close to the light corners so as to keep the corners pretty sharp. Add a split down the middle of these 2 new edges to create some curvature of the indicator light. Make sure to redistribute the verts and clean up any problem areas (**Fig09**).

Fig 07

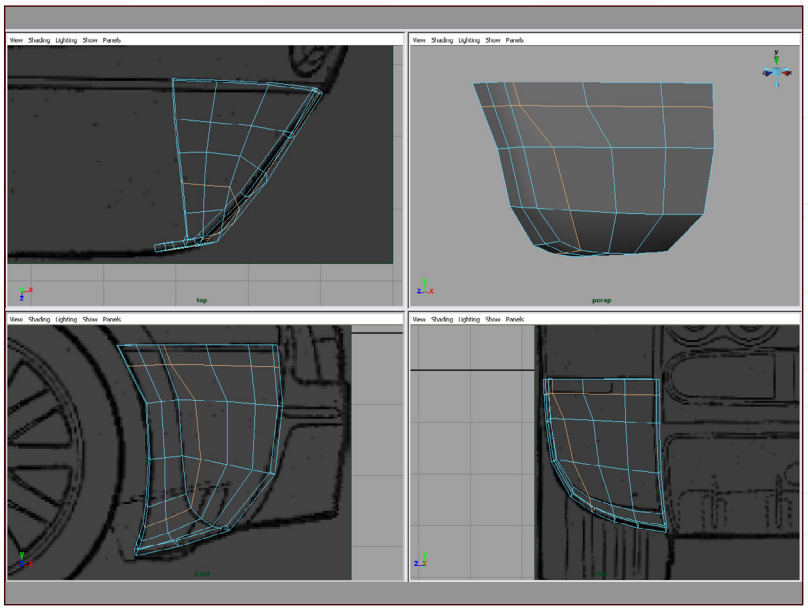


Fig 08

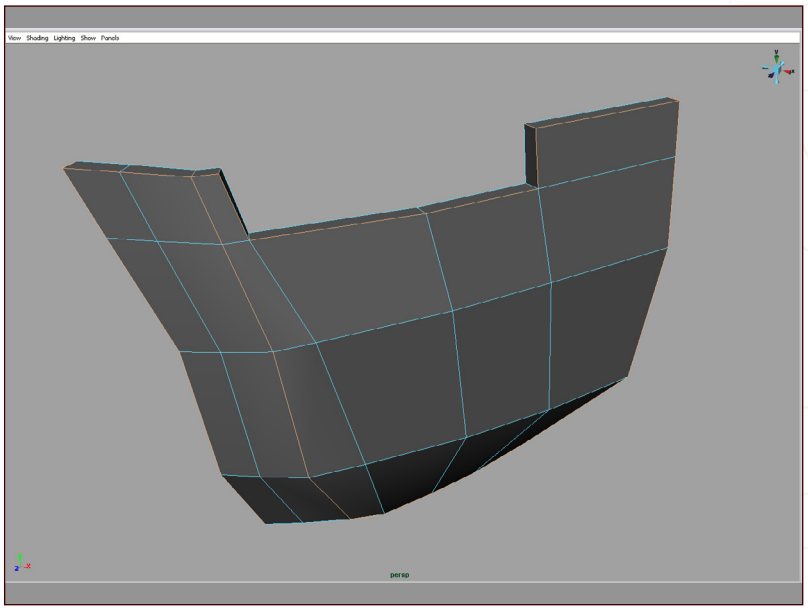
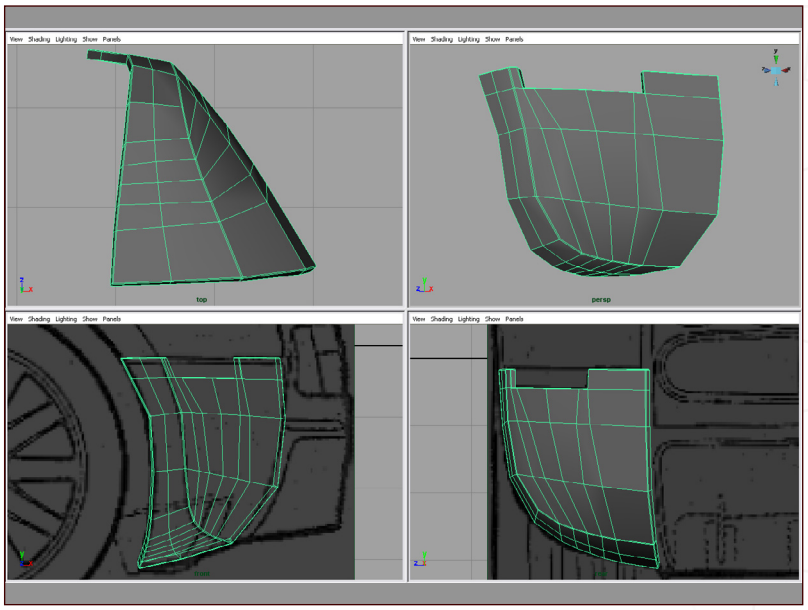


Fig 09



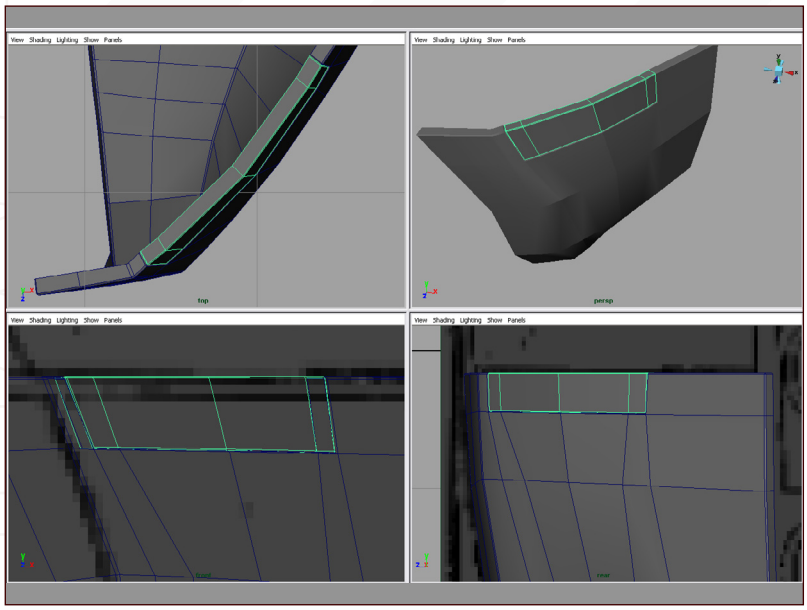


Fig 10

The actual indicator light is created by giving our earlier extracted piece some depth and then matching up the curvature of the light to the curvature of the fender (**Fig10**).

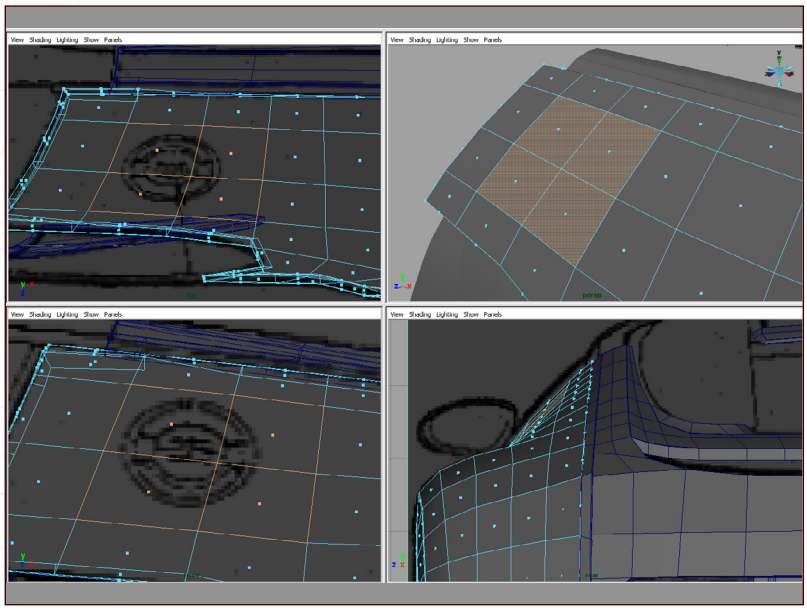


Fig 11

Working our way around the car, the next accessory is the petrol cap. We will begin by outlining the hole for the petrol cap. We are going to have to add some circular geometry to the back side panel for the petrol cap to sit in. This can sometimes be tricky and can very often lead to putting bumps in your previously smooth mesh. So I will show you a technique that I use a lot to create circular holes whilst keeping the mesh flow intact. Firstly, duplicate the back side panel mesh and hide the original piece. The hole for the petrol cap will be created using the four highlighted faces (**Fig11**), which will give us 8 verts to create the hole from.

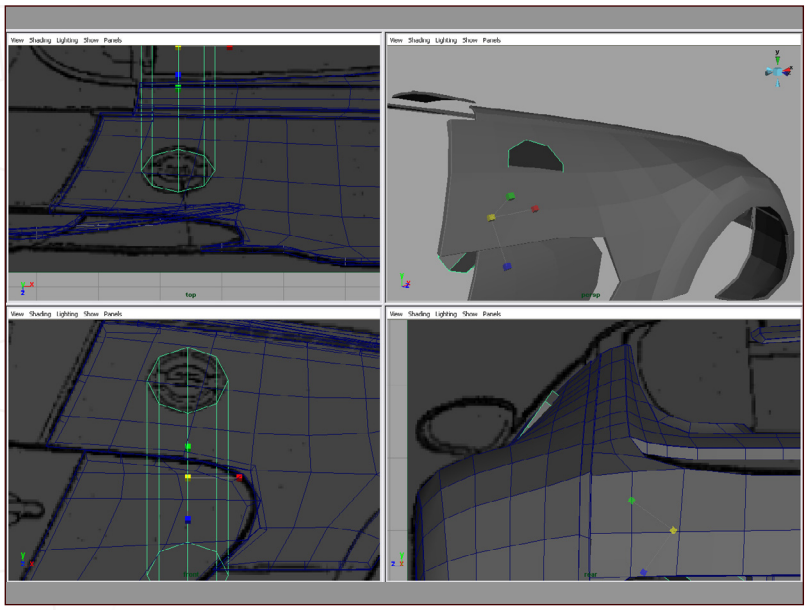
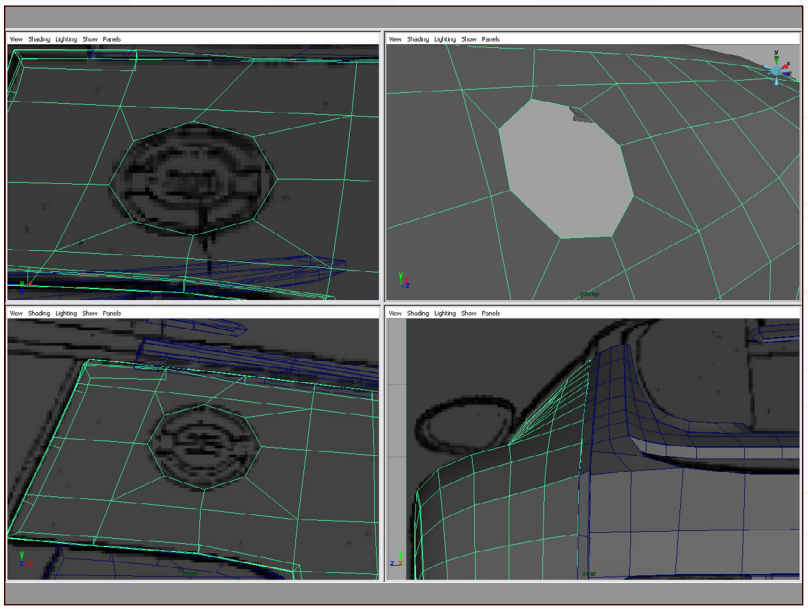


Fig 12

Grab an 8 sided cylinder and rotate and move it into the position of the fuel cap (**Fig12**) and then scale it (in my case, along the Y axis) so the cylinder completely sticks out of the back side panel. Select the back side panel first, followed by the cylinder and perform a Boolean operation to cut out a hole from the cylinder. This will give us the 8 points we need to create the opening using the original back side panel. So, unhide the rear fender and perform any sort of extrusion on those original four faces in **Fig11** and then delete those faces. We can now snap to the verts created by the Boolean to create a perfect octagon whilst keeping our mesh geometry in exactly the same place it was before (but now with a hole for the fuel cap). More often than

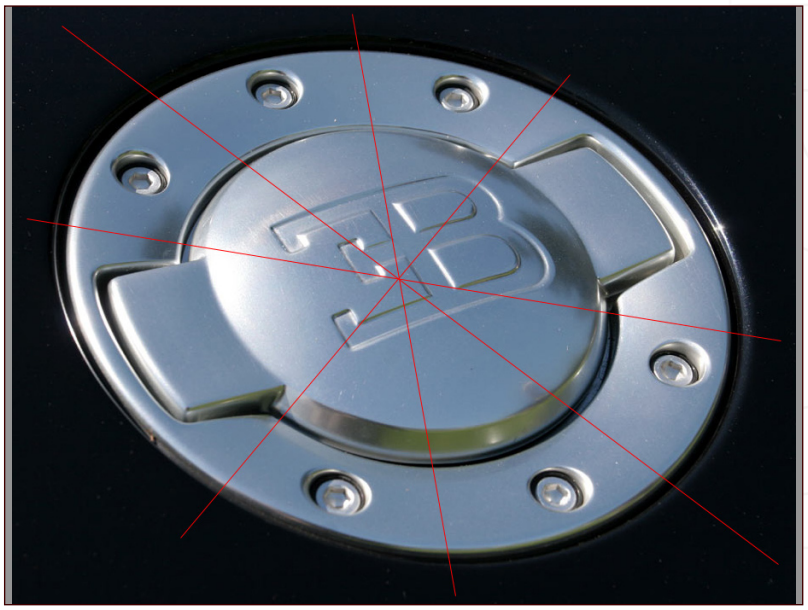
not the surrounding edges may need to be redistributed, but by using curve snapping the flow of the mesh remains intact and we have our hole (**Fig13**) – you can now delete the duplicated fender, it isn't needed any more.

Fig 13



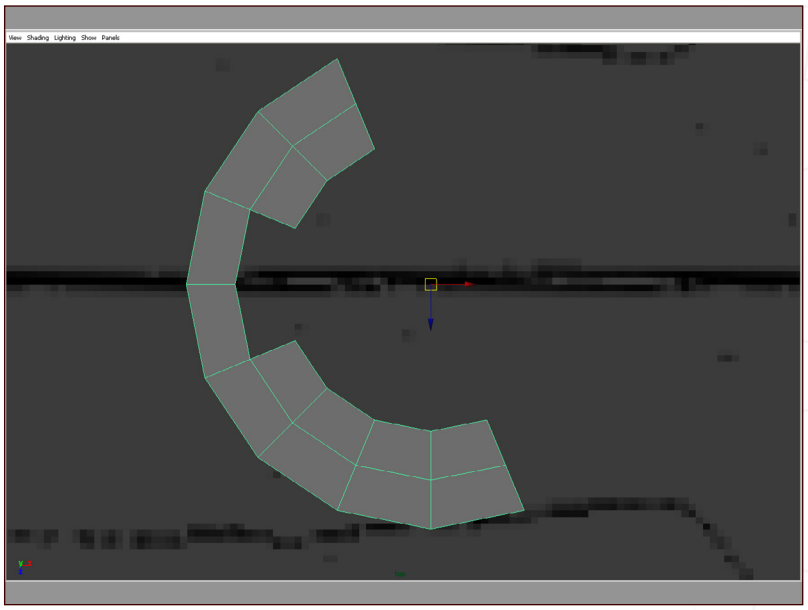
So, onto the actual fuel cap. We will create the fuel cap in the top view because this will make it easier to manipulate the verts and then we will position the completed fuel cap into place. Start by creating a cylinder with 16 sides. Why 16? Well, if you divide the fuel cap into equal segments in your head, you will notice there are eight main features to the fuel cap (**Fig14**) – six for each of the bolts and two for either end of the cap inside.

Fig 14



So, with that in mind, 16 sides will give you more scope for creating the pieces of the actual cap – 8 wouldn't give you enough control. Give the cylinder 5 subdivision caps and delete all faces except for the ones in **Fig15** – we will be working with just half of the object and then mirror it to create the whole cap.

Fig 15



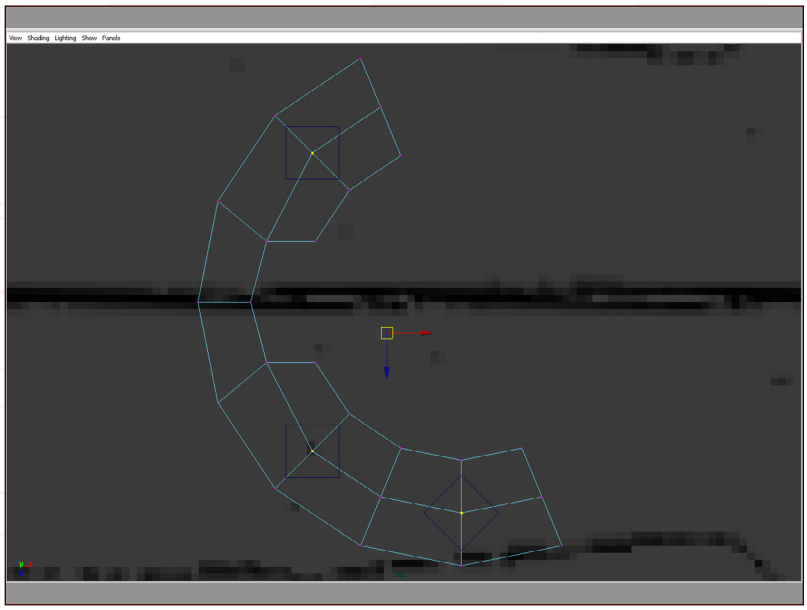


Fig 16

Create 3 cubes and snap them to the highlighted verts (**Fig16**). Chamfer these verts and snap the new verts in Z and then X to the corners of the cubes – these will create our holes for the bolts.

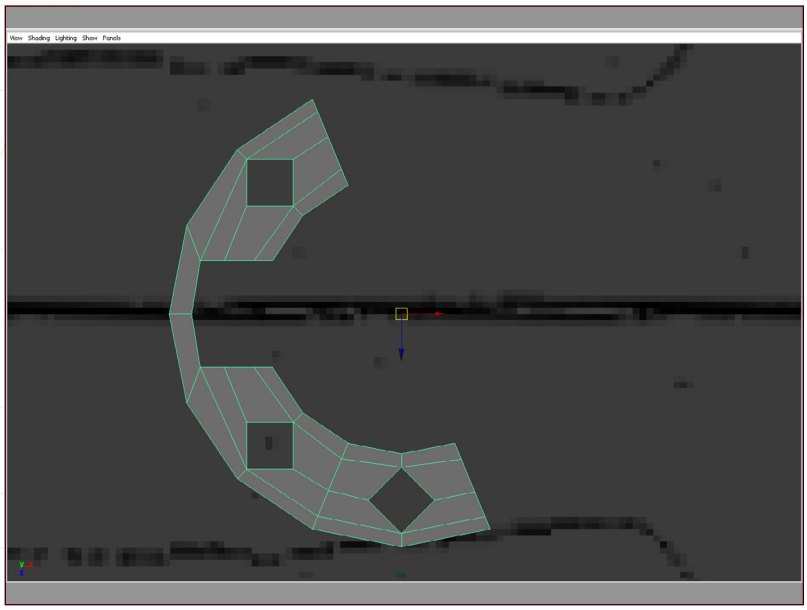


Fig 17

Create some splits around this object to clean up the five sided polygons and delete the two new faces to make room for the cap inside (**Fig17**). Extrude the outer, inner and hole edges straight downwards.

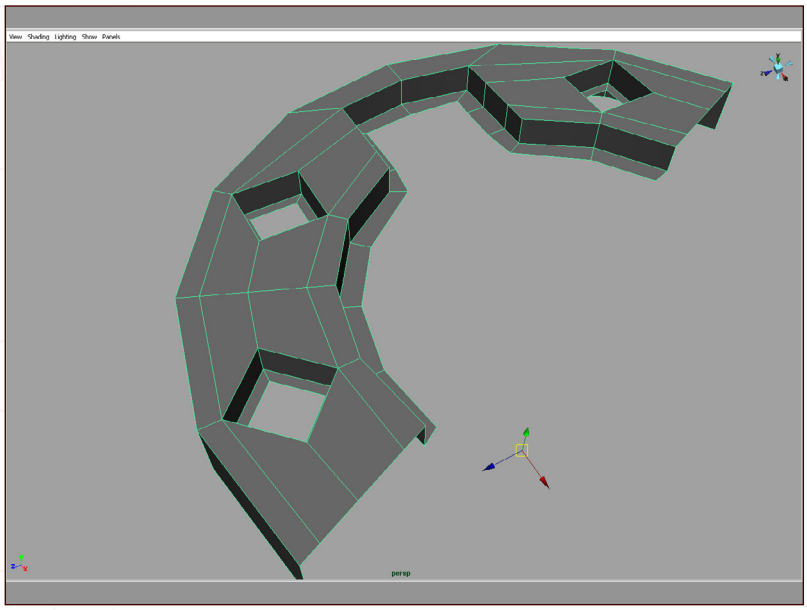
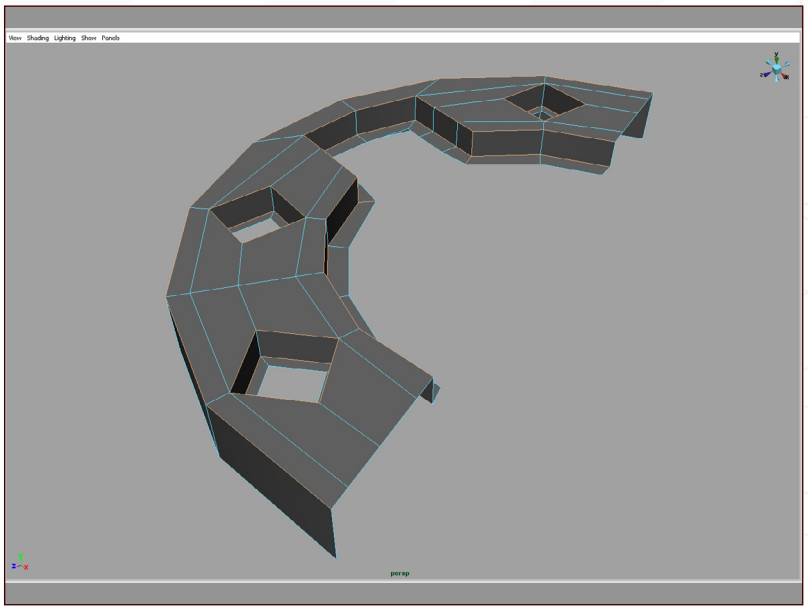


Fig 18

Give the inner edges and hole edges a little lip with another extrude (**Fig18**) – make sure to tuck the verts in along the mirror line.

Grab the selected edges (**Fig19**), bevel them and perform any necessary clean up. Do a quick check on how your cap is looking smoothed, then delete the smooth and mirror the cap half in both the X and Z axis. Merge the axis along the centre and the outer cap is done.

Fig 19



The next few steps to complete the petrol cap should be relatively simple. Begin with a cylinder wit 8 sides and a few subdivision caps and place it in the centre of the outer fuel cap – make it slightly smaller than the hole we have for the inner cap, because it slopes outwards. Delete all faces except the top ones and then delete half of the top faces – again, we'll construct just one half of the object and then mirror it. Extrude the two outer most edges to fill in the gap between this new object and the outer fuel cap (**Fig20**). Extrude the outer edges downwards and scale the edges of the cylindrical part outwards to fully fill the gap. Extrude the lowest edges down once more and give the top of the cap some rounding by pulling rings of verts up a bit – check how it's looking on your smooth version. Make some splits on the square extrusion to match the flow of the outer cap and then bevel the selected edges (**Fig21**). Last thing to do is mirror the object and lower it into position - I would recommend chamfering the very centre vert to stop a nasty point appearing when the object is smoothed.

Fig 20

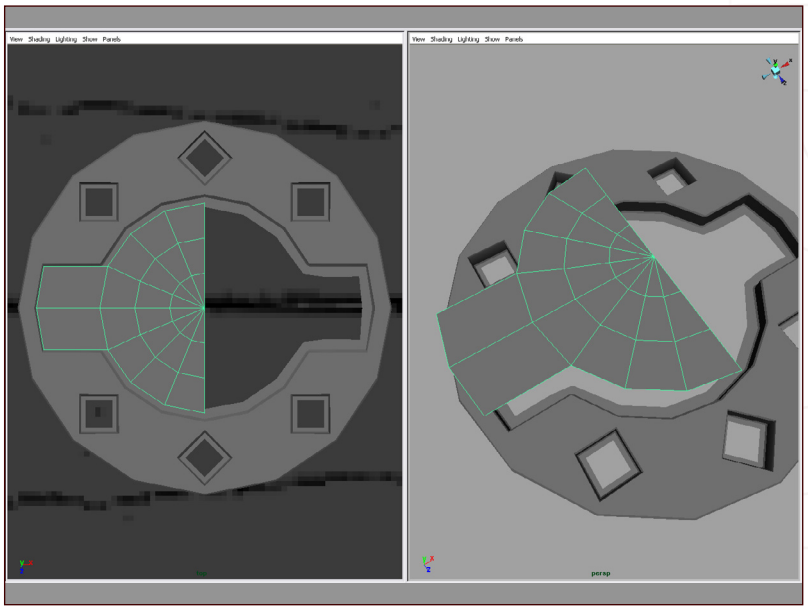
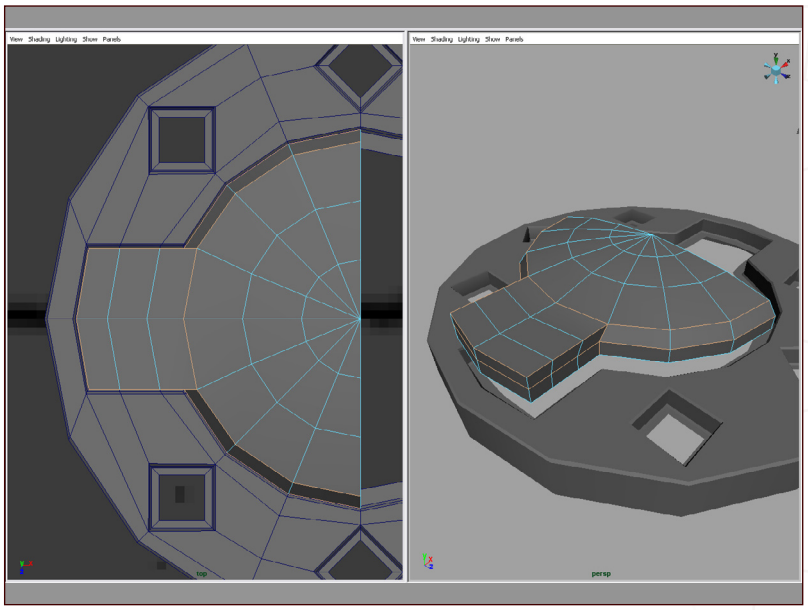


Fig 21



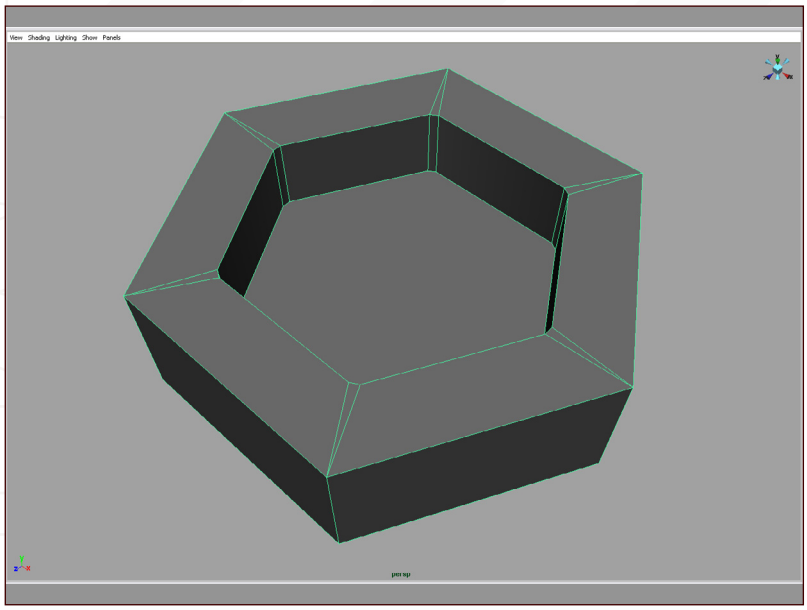


Fig 22

I will now show you how to make the bolts – this technique can be used to create any bolts you like. Create a cylinder with six edges and scale it to a similar size to the hole for the bolt. Perform a uniform scale extrusion on the top face and then extrude this new face downwards. Bevel the vertical edges of the 'hole' we have just made and snap the floating verts to the verts around the edge (**Fig22**). Finally grab the rings of edges inside the hole, outside the hole and around the edge of the bolt, bevel them and perform any cleanup necessary. Place the bolt into position making sure it is scaled to the right size.

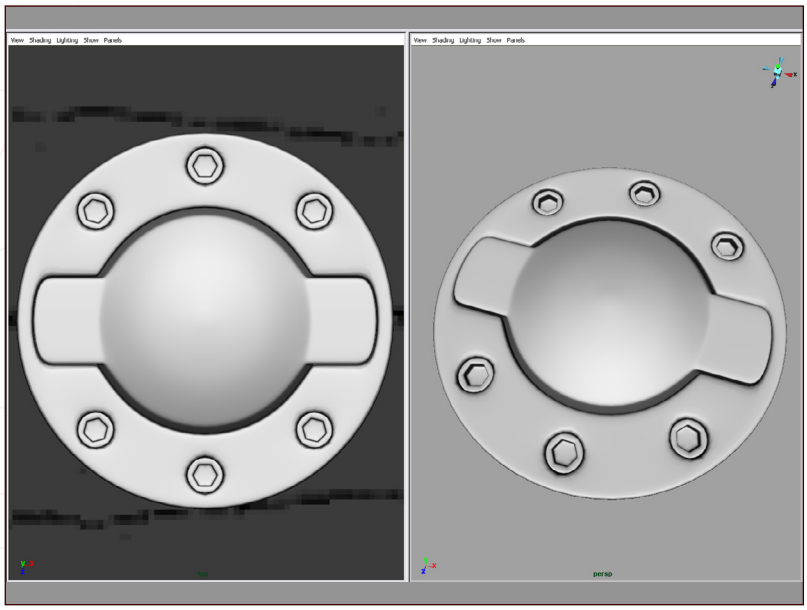


Fig 23

The very last thing to do is to move the bolts pivot to the centre of the fuel cap and then duplicate it 5 times and rotate each piece into position (**Fig23**).

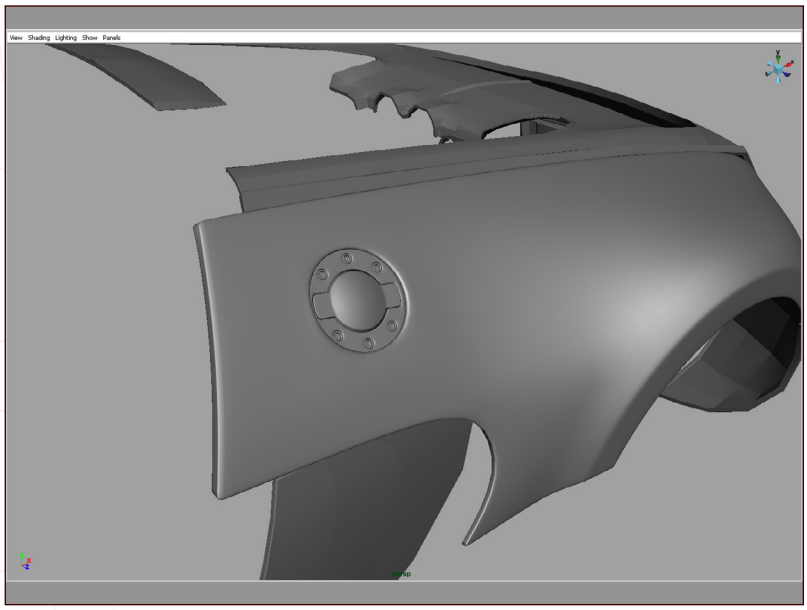


Fig 24

Now, with that done, it's just a case of positioning the fuel cap and giving the fuel cap hole some depth. Before we give the hole some depth – with a simple extrusion and then bevel – I would recommend creating a flat octagon shape which is snapped to each of the points of the rear fender hole as this will serve as a snapping point for positioning the fuel cap. Now, group all objects of the smoothed fuel cap and use the Snap Together tool to snap this group to the octagonal disc we created just now – you may need to scale in the Y axis if your object is flipped when performing this operation. Select the grouped cap and then the disc and use the Align Objects tool with the Align Mode as 'Mid' to centre this piece to the disc. Now it's just a case of moving and scaling the grouped object into position – you may need to add a little rotation too. **Fig24** shows the rear fender with the fuel cap in place.

Next stop is the rear lights and hopefully these shouldn't cause too many problems. If you have been following along closely then the following technique I'm about to show you will work fine. If not, then either ammend your mesh so it looks similar to mine or just adapt the technique to fit your mesh. Bring in a 6 sided cylinder and line it up in the rear view with the back light. Using the Split Polygon tool make some cuts to outline the light using the cylinder as a guide (**Fig25**) – you obviously will not be able to get it dead on unless you have been very lucky with how you constructed your initial geometry, but try and get it as close as possible. Now, using curve snapping line up the points with the points of the hexagon – you may need to make some 'helper' cuts (edges that you can curve snap to so as to position the verts where needed but which are not required in the final mesh). Delete the inner faces of the hexagon that we have outlined and extrude the edges backwards and bevel the lip. Perform any cleanup of verts necessary to keep the mesh nice and smooth (**Fig26**).

Fig 25

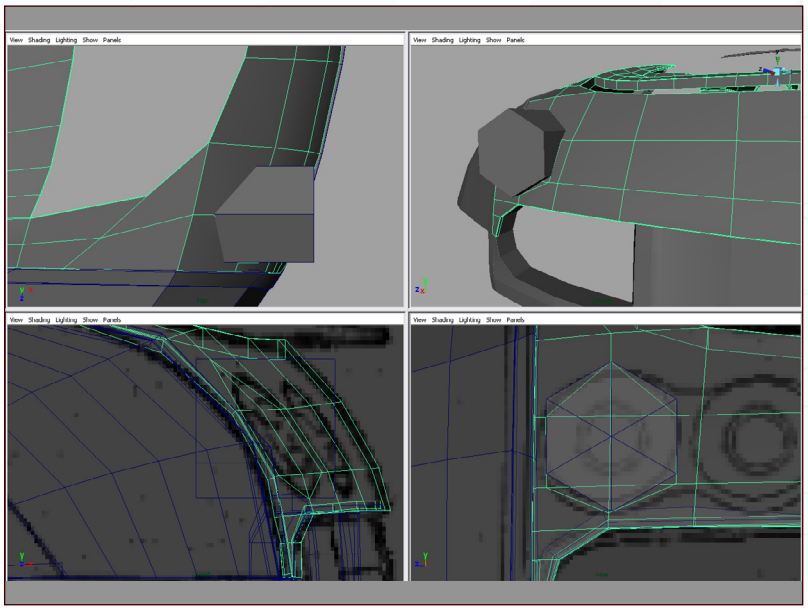
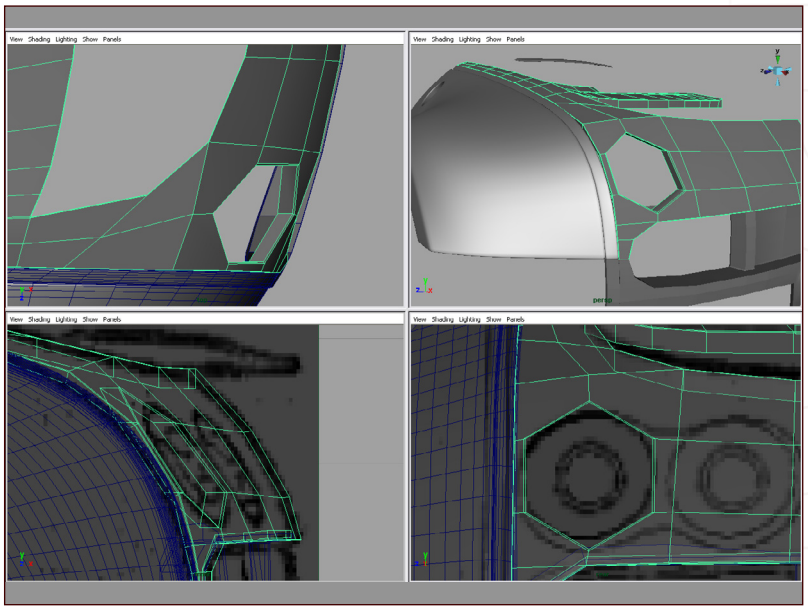
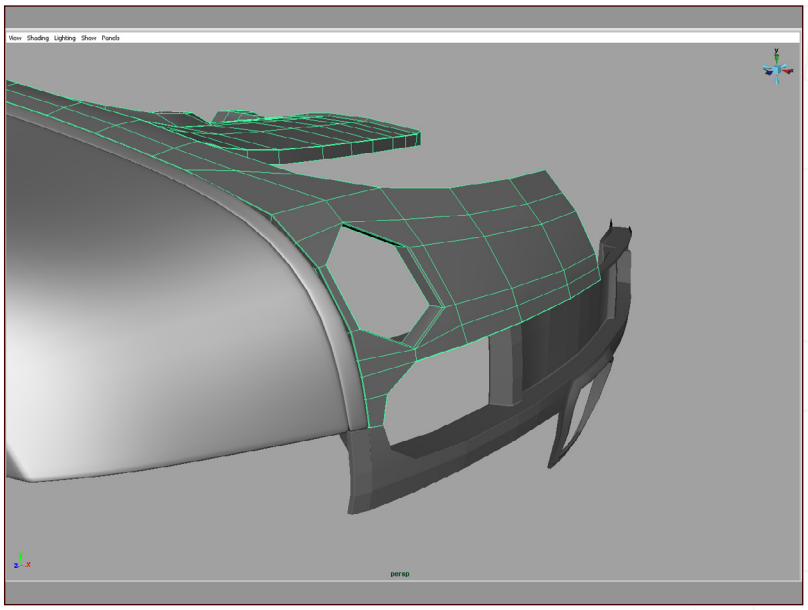


Fig 26



If you look at the pictures you should notice that we have created a couple of five sided polygons, these actually do not appear to be causing any problems with our mesh at all. However, if you must have a mesh composed entirely of quads (a very good practise to get into) then this is easily fixed. A couple of splits across the whole back face will bring us back to all quads – this may require some clean up though (**Fig27**).

Fig 27



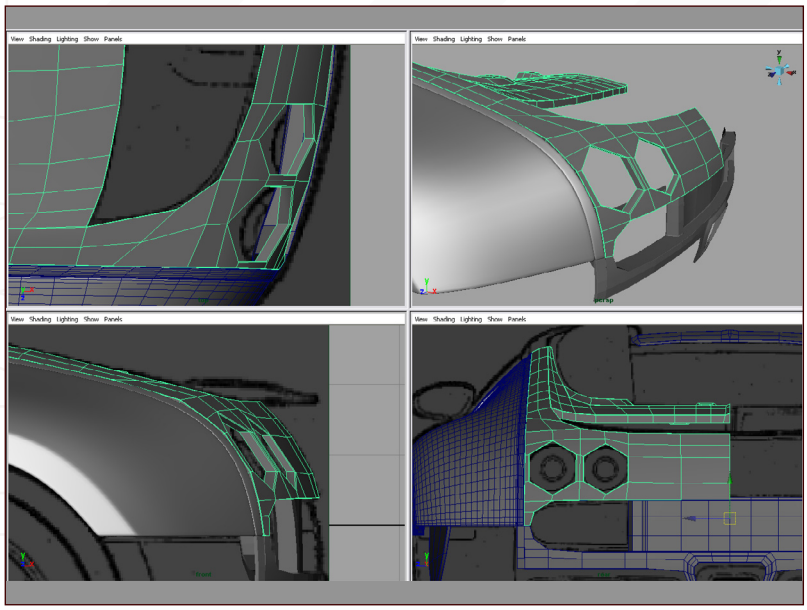


Fig 28

However, I think for the moment I'm happy with the mesh as it is. Just follow this exact same technique to create the second rear headlight (**Fig28**).

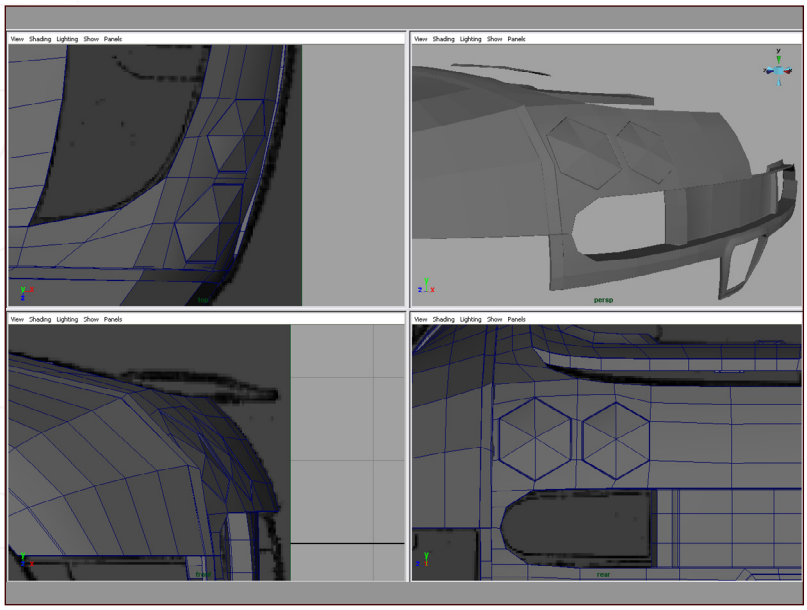


Fig 29

The actual light casings couldn't be simpler, just create 2 bevelled cylindrical discs that fill the light holes (**Fig29**) – these can either be placed by eye or if you're really precise snap them to the verts of the hole before it has been bevelled.

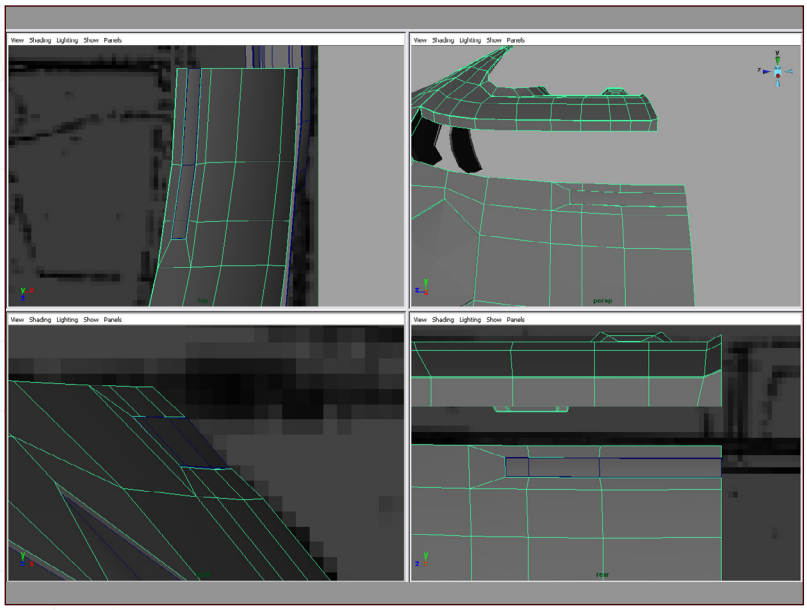
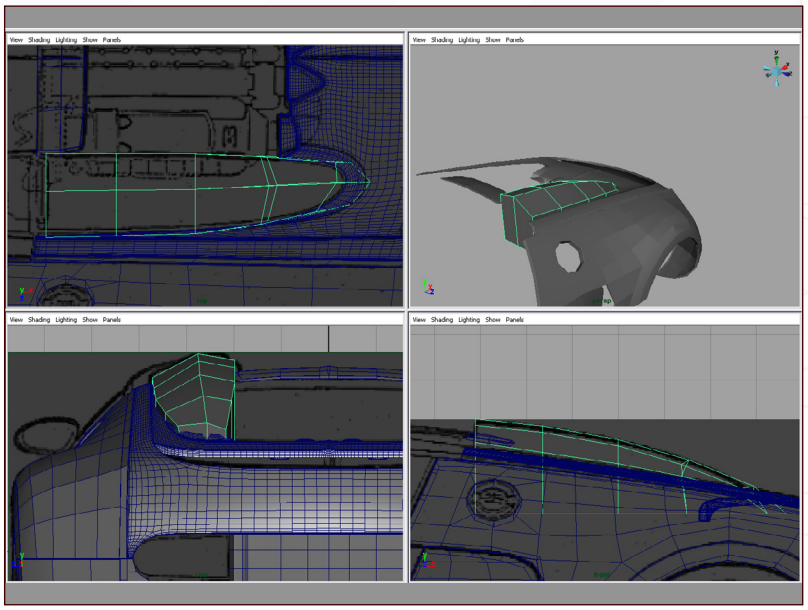


Fig 30

Onto the rear brake light now. This is created in a very similar way to the rear lights. Just outline the shape of the brake light and then extrude backwards. Fill in the gap with a rectangular shape positioned to follow the flow of the body (**Fig30**). Once this is all completed to your satisfaction it is time to mirror this piece.

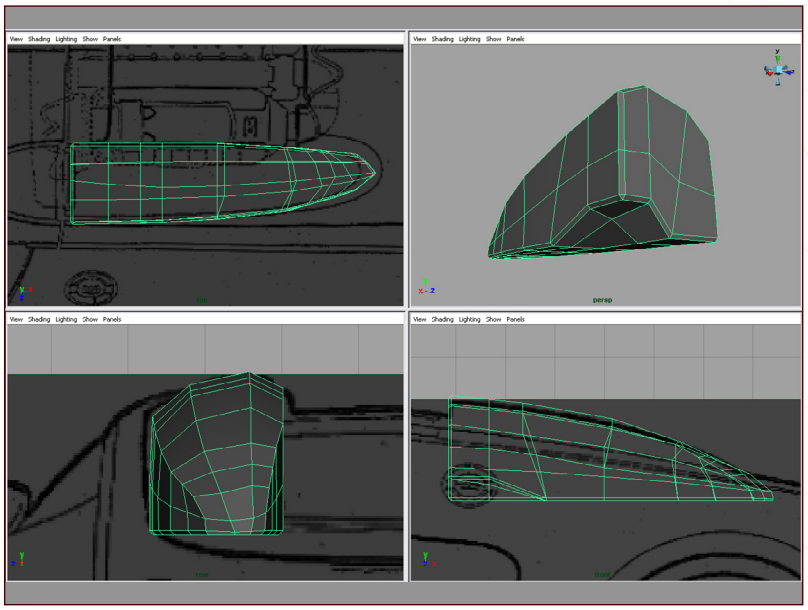
We'll move on up to the engine now. The engine fins are relatively simple and are constructed from a box which is then split and shaped (**Fig31**).

Fig 31



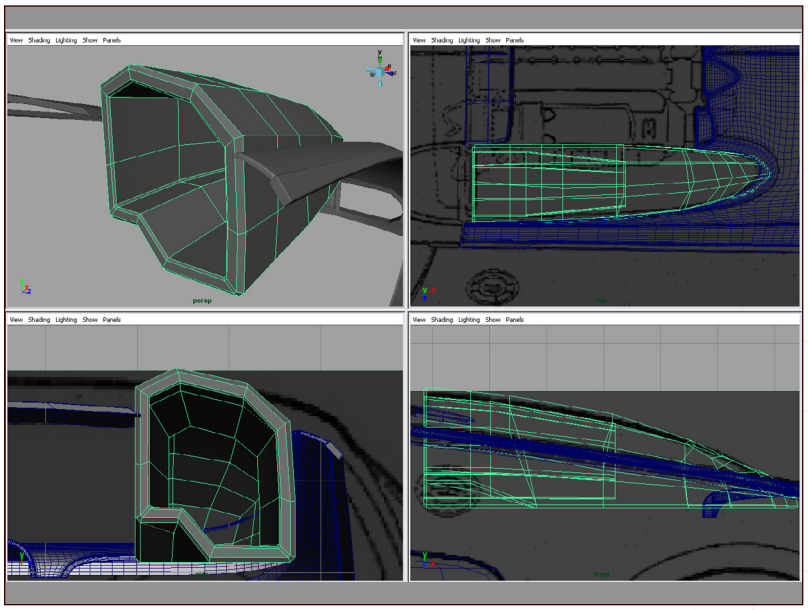
Make sure to keep checking your smooth and your references. Bevel along the bottom and front edges and pull the bottom front corner up a bit to create a bit of elevation. Keep adding and tweaking your detail (**Fig32**) – although the mesh looks a little messy in places, the smoothed version looks fine and that's what we are modelling too.

Fig 32



Next, grab all of the very front most faces and extrude them inwards to create the hole in the fin – delete the selected faces. Shape the hole so it's tidier and then extrude the edges backwards and perform a bevel on the outer edges (**Fig33**).

Fig 33



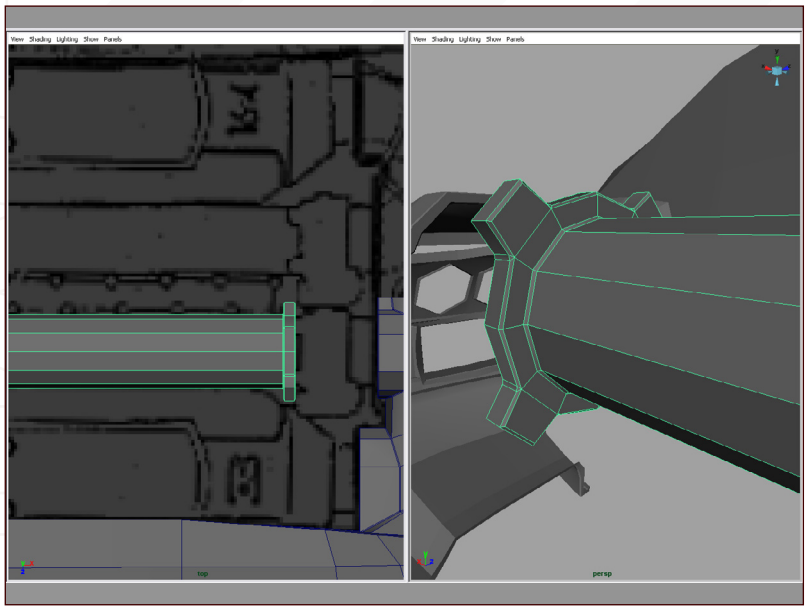


Fig 34

For the actual engine part of the car we can probably get away with filling in the gap with some modified primitives – this will be more than suitable unless you intend to have some super close renders all around the engine. Grab a polygon cylinder and give it a value of 12 in the subdivision axis. Bring it into the engine bay compartment and scale it to fit the size of one of the big long tubes within the engine. This part of the engine has an extruded lip all the way around, so create a slice towards the end of this cylinder, grab the faces and extrude outwards to create a lip. Select the four 'corner' faces and extrude them all in the local Z axis and then scale them in the local Y just a touch. Grab the edges of the cylinders and around these new extrusions and bevel them and perform the usual cleanup (**Fig34**).

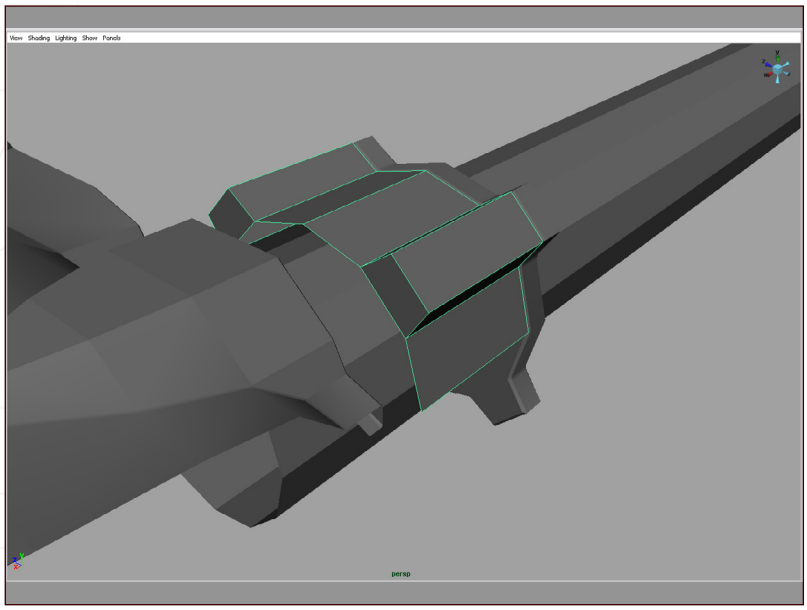


Fig 35

Extrude the middle face of the ridge towards the back of the car and into the 'humps' we created in part 2 – this cylinder is actually thicker than the original tube, so scale it outwards quite a bit too. Create a new cylinder that will encase this extrusion (**Fig35**).

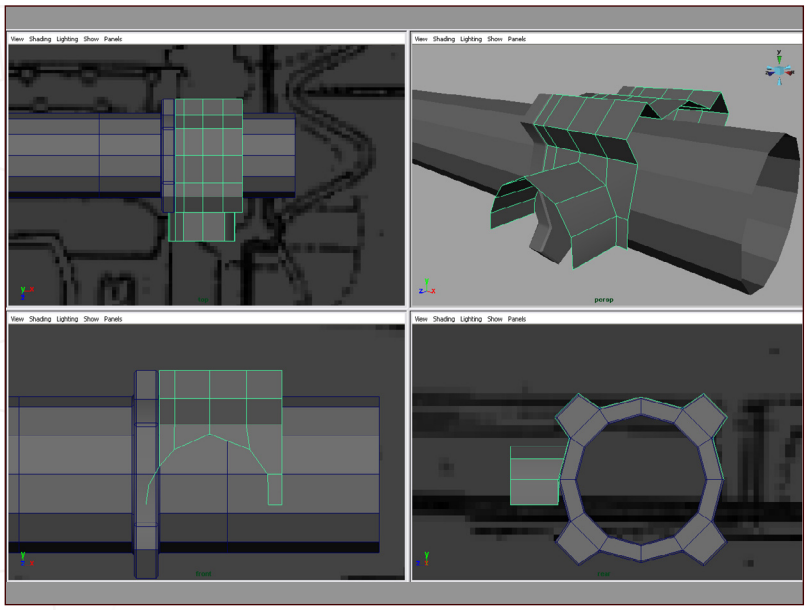
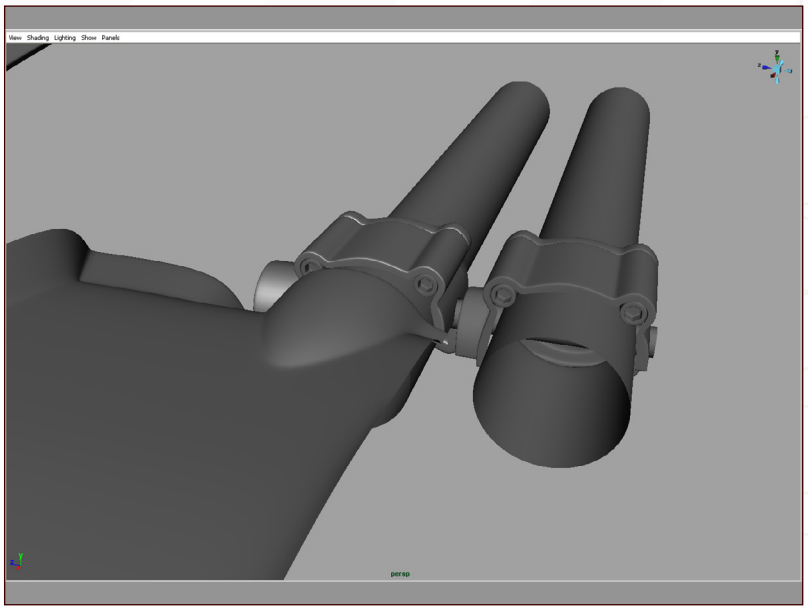


Fig 36

Create a cylindrical extrusion coming off of the side of this piece (**Fig36**) and then make a smaller opening on the other side of this piece – basically a thin tube needs to run through this opening. Once you are satisfied with all openings, grab all of the outer edges and extrude to give some depth and then bevel them along with any other edges that need to remain 'hard'. When you're happy with the shape create a couple of little bolts to sit in the 'ears' of this new piece and then duplicate the whole lot and move it over to the other side of the car.

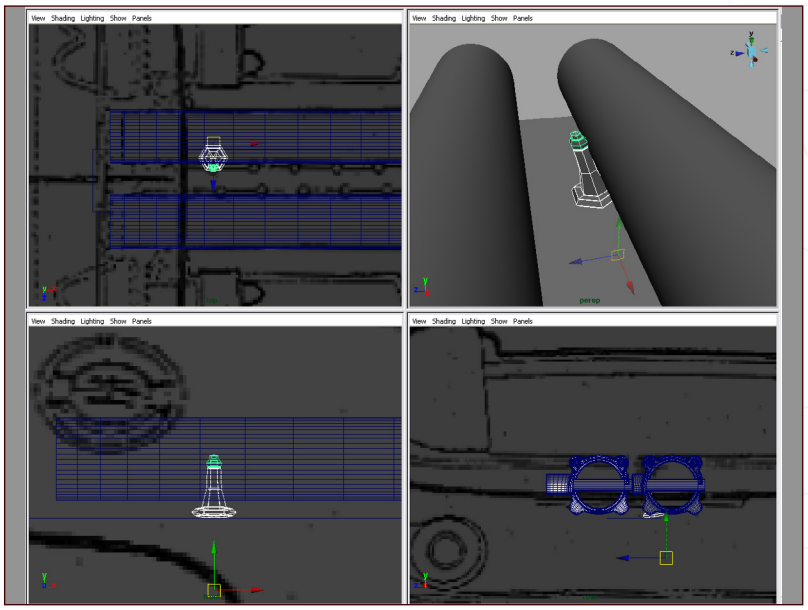
Don't forgot to run a tube through the ridges we have just shaped (**Fig37**).

Fig 37



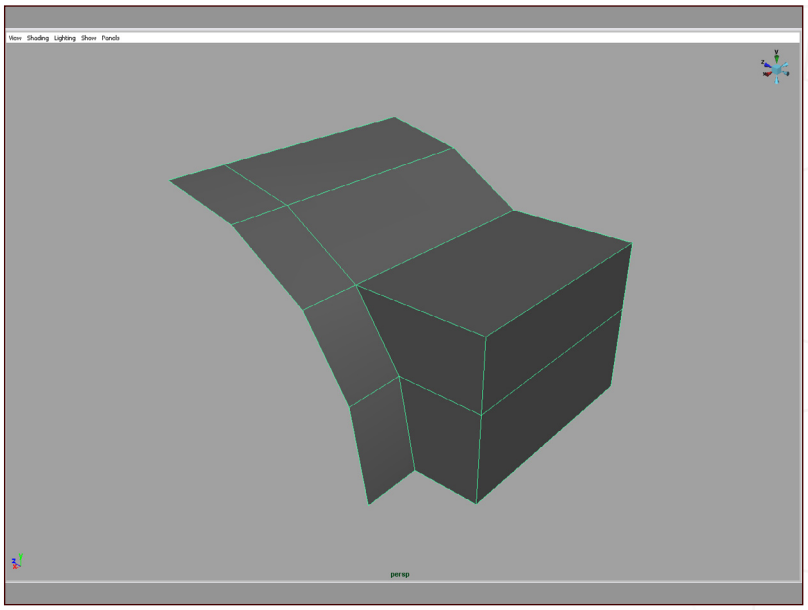
Create an object like in **Fig38**, it's basically 2 cylindrical pieces with various extrusions and scales and then place these all along the length of each tube – make sure that the left side is slightly staggered from the right side.

Fig 38



Onto the engine blocks either side of the engine tubes (I hope these technical names aren't confusing!!). Create a cylinder and then delete faces so you are left with a quarter, from which you need to extrude some faces out (**Fig39**). Extrude the cylindrical piece forward and scale it in.

Fig 39



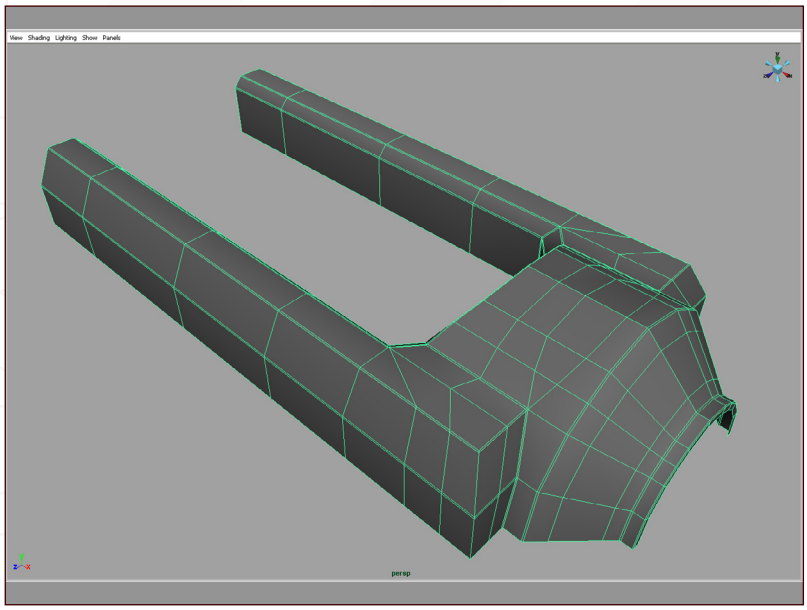


Fig 40

Also extrude the back edges towards the front of the car, using your blueprints as a rough guide. Make sure to mirror the object and apply bevels (**Fig40**); extra edge rings have been added to keep the bevels nice and tight.

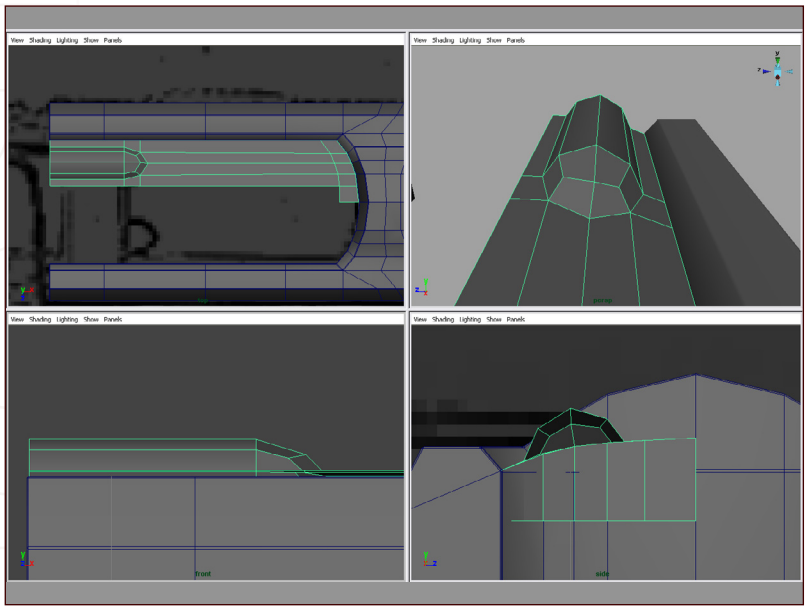


Fig 41

Let's finish of the engine block now by creating the inner piece; this shouldn't be too difficult. Start off by creating a box and modifying it so it fills the hole in the engine block, the inner shape should curve up to the middle. Create a hump (**Fig41**) and then it's just a case of extruding the inner block towards the back window.

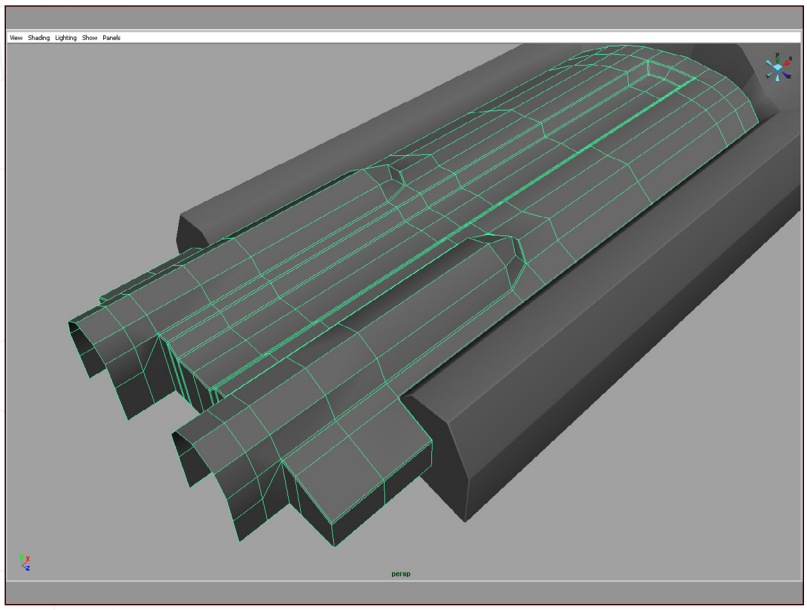
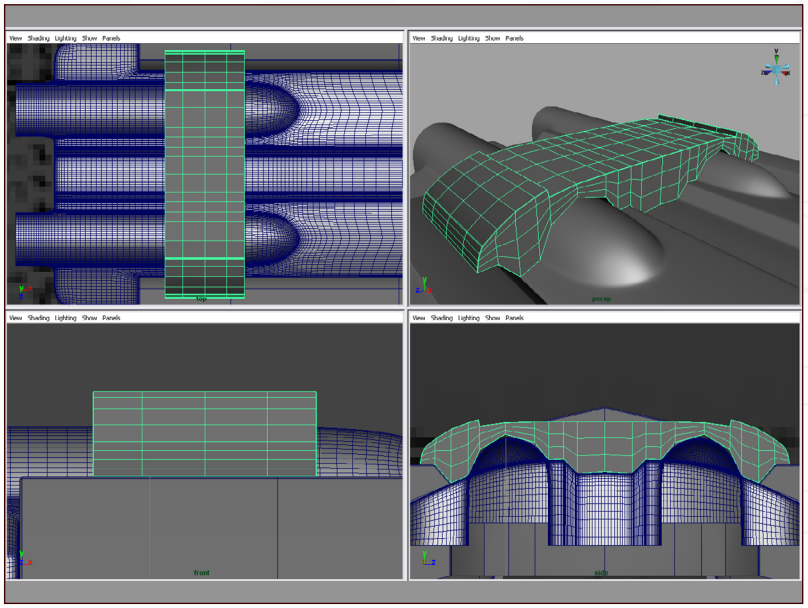


Fig 42

Add bevels and perform any cleanup before mirroring (**Fig42**).

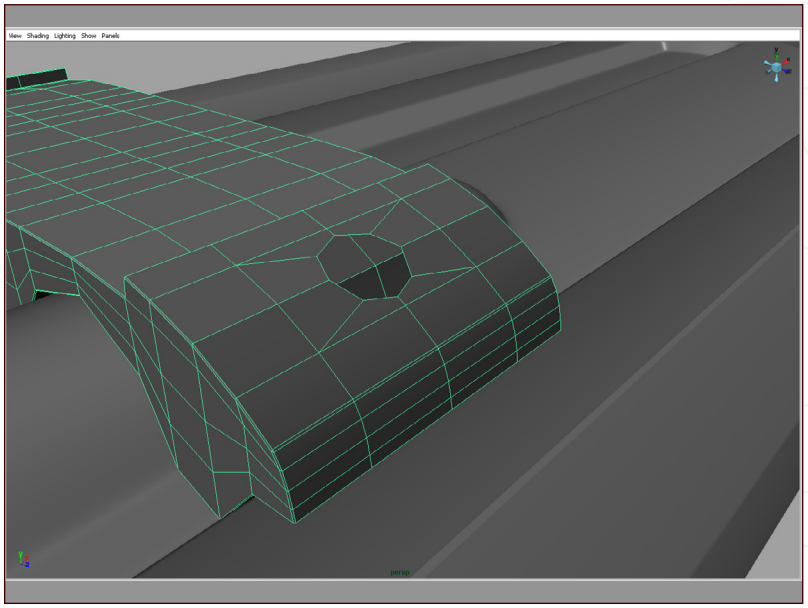
Modify a cube to create the brace over the inner engine piece (**Fig43**) and make sure to bevel the edges and all corners.

Fig 43



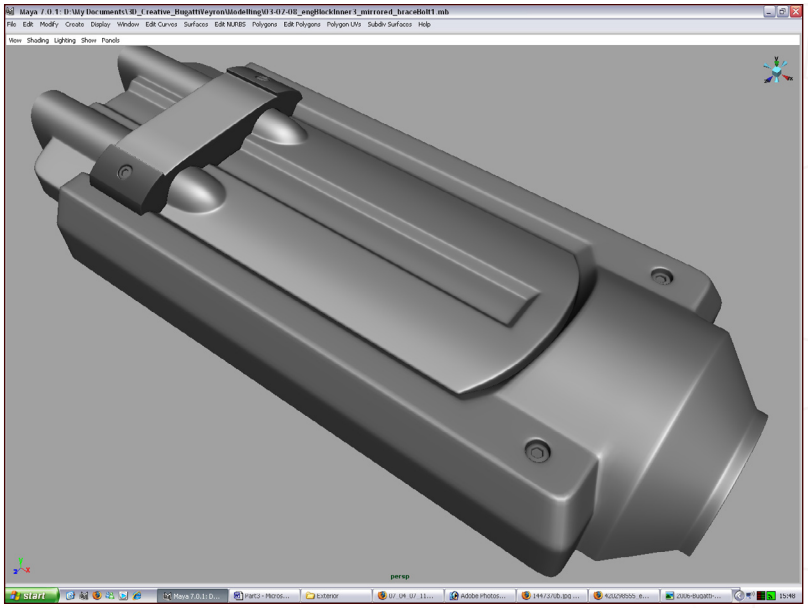
Chamfer the middle vert of the brace's hump and shape it like in **Fig44**. Extrude this hole downwards and bevel the edges to create the hole ready for the screw. Just create the bolt the same way that you have created all of the other ones.

Fig44



Also, a similar opening needs to be modelled on the engine block – just check your references and I'm sure you've learnt enough by now to be able to do this yourself (**Fig45**).

Fig 45



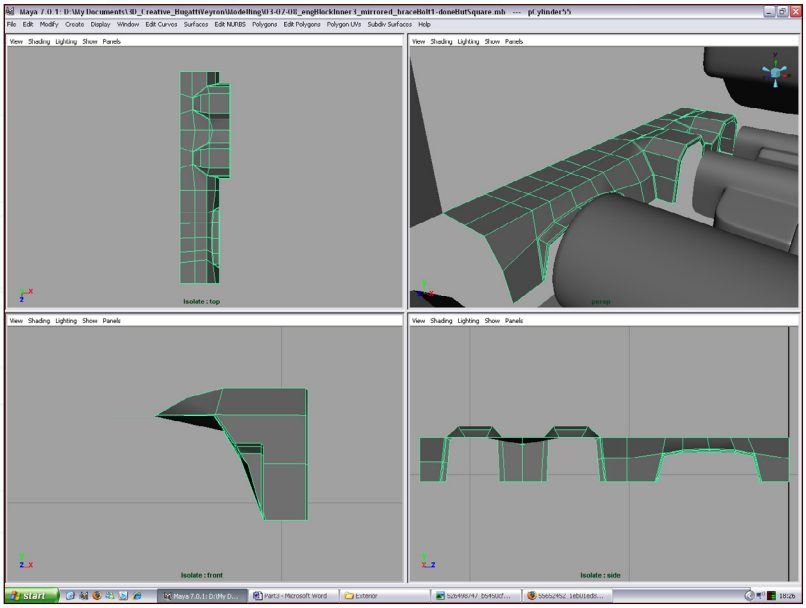


Fig 46

The rear window is really simple and is basically a modified box that has been bevelled along the sides and at the corners. The panelling under the window will take a bit more work, but isn't too dissimilar to the rear panelling where the engine tubes sit. I won't go into step by step detail here because you have modelled more than enough tricky pieces to be able to handle this. Just use the techniques learnt so far and aim for a shape similar to **Fig46**. With this piece complete it's just a case of making sure none of the engine objects are penetrating one another. Make sure all of the tubes are nicely tucked into their holes and either creating a few filler pieces or adding a floor to the engine bay so people won't see all the way through.

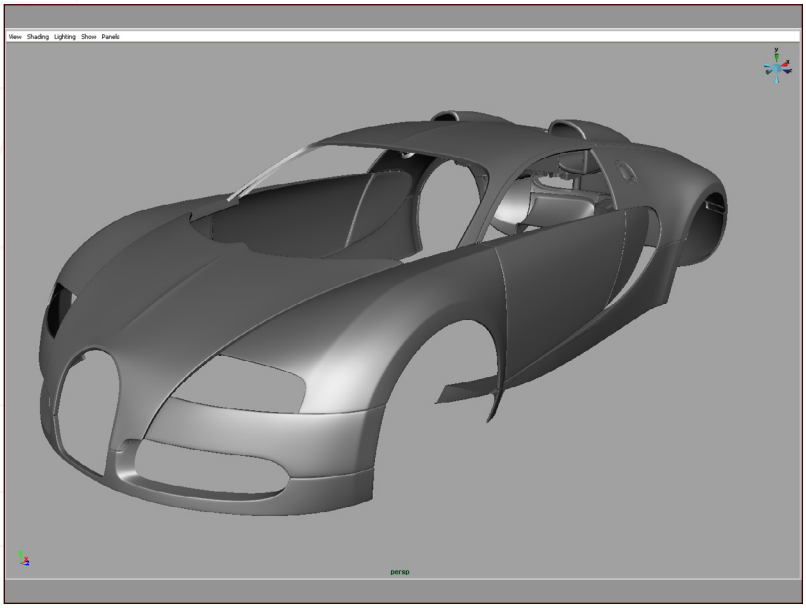


Fig 47

The very last thing to do is to mirror all parts of the car that require mirroring. Hopefully your car is looking similar to **Fig47** and **Fig48**. Well, we've managed to finish off the exterior panelling and created a fair chunk of the accessories in this part. Next month we will finish the accessories – shouldn't take too long now we know what we're doing – and we will create the wheels and with that the exterior will be complete.

Thanks for reading this and following along and I'll see you next month.

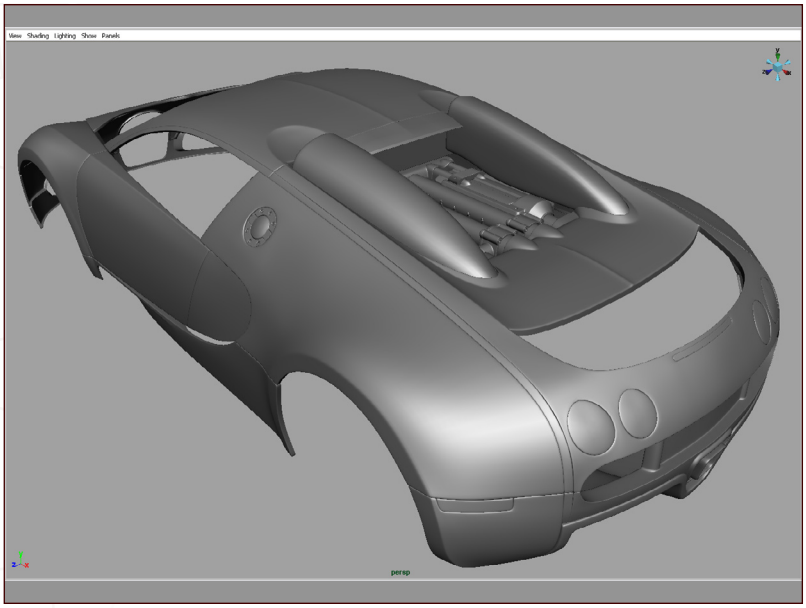


Fig 48

BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

Tutorial by:
ANDREW HOBSON
For more from this artist, contact them:
andrewhobson2@gmail.com

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The series will cover an in-depth and comprehensive guide to modelling the amazing Bugatti Veyron car, from start to finish, and will focus on the key techniques and stages involved in building the chassis, as well as details such as the windows, lights, vents, petrol caps, engine parts and so on. We will then move on to creating the wheels, including tyres and hubcaps, before going on to building and incorporating an interior, namely the dashboard and seating. The series will proceed with a section on creating and applying materials for the numerous parts of the car, such as the paint work, chrome, rubber and glass, before concluding with a tutorial devoted to setting the scene for a finished render. The final part will cover the importance of a good lighting rig and light parameters, as well as the importance of a camera and the integral part that the rendering settings play in showcasing the model for a portfolio.

This series aims to show a comprehensive guide to creating a finished car for people new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software. The tutorials do not detail every single step of adding individual edge loops and vertices, but does endeavour to outline each important stage and explain the crucial techniques necessary to following the exercise.

The schedule is as follows:

Issue 029 January 2008
MODELLING THE CHASSIS - BASICS

Issue 030 February 2008
MODELLING THE CHASSIS - DETAILS

Issue 031 March 2008
LIGHTS, RADIATOR GRILL & VENTS

Issue 032 April 2008
WHEELS, TYRES & RIMS

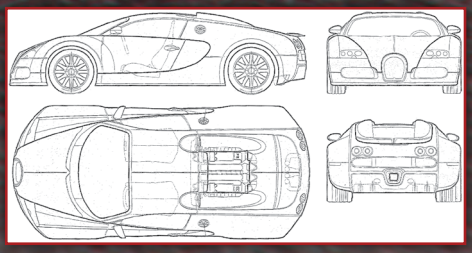
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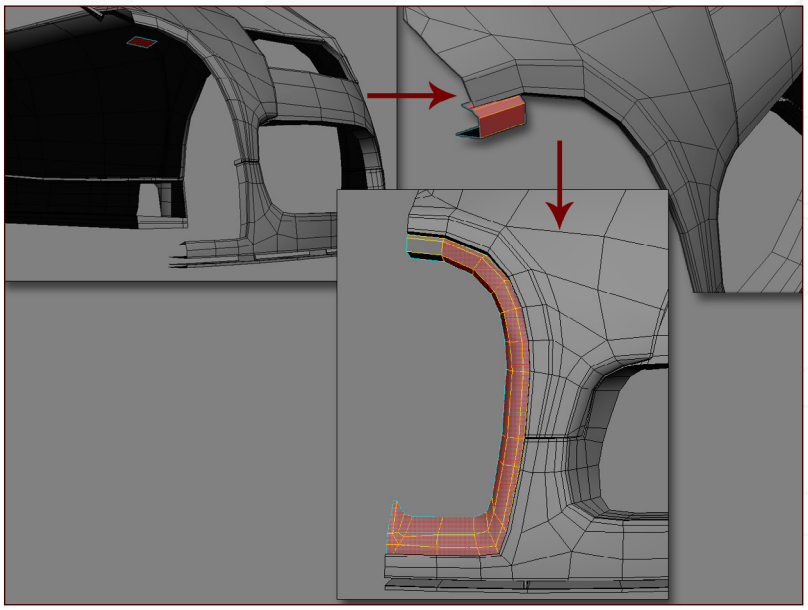
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BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

Welcome to the third part of this car modelling series. This month, we'll take a look at that how you can add some accessories to the bodywork. This will include modelling the details such as lights, bumper, windows, grilles, etc. Let's start!

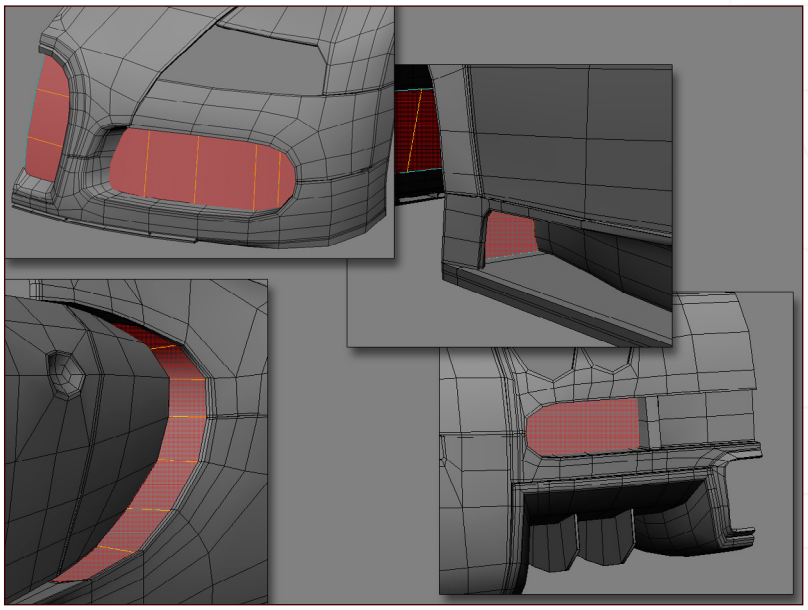
First, create the chrome edge of the front air inlet. Lets create and move a simple Grid to the edge of the inlet. Extrude the border edge a few times to create the profile. Extrude this profile a couple of times along the air inlet's border, and then create the middle bulging (**Fig01**).

Fig 01



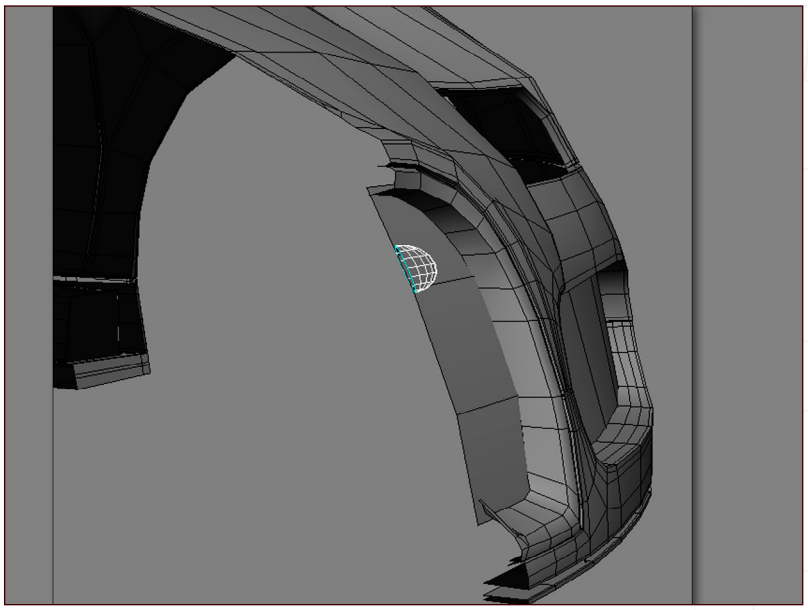
Lets get the air inlet grids. We can model this, but it may be more efficient if we make it by way of an alpha channel texture. Similar to previous approaches, you can easily create the other air inlet grids although we will texture them in a later tutorial (**Fig02**).

Fig 02



The emblem on the front of the car will be created from one half of a Sphere, scaled and moved into position (**Fig03**).

Fig 03



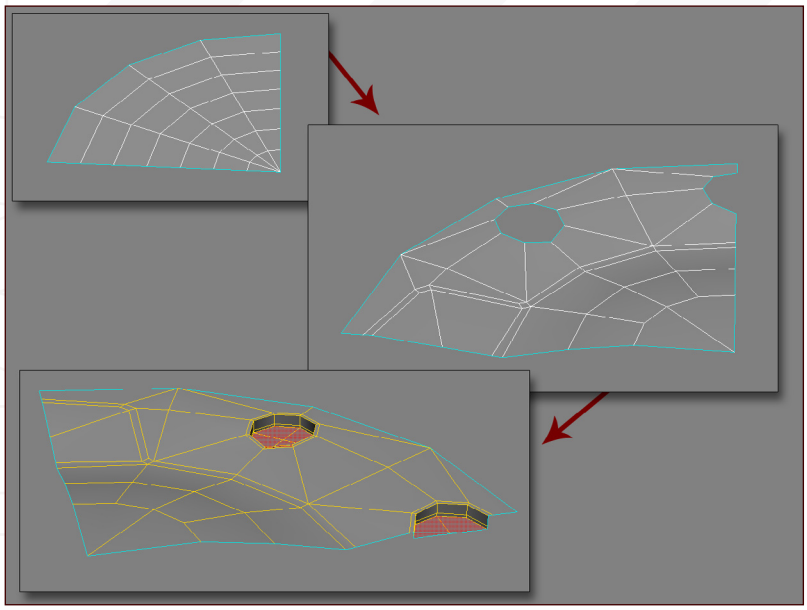


Fig 04

The fuel cap is more difficult object. Using the top of a Cylinder and the Cap Symmetry, delete the unnecessary polygons but retaining only one quarter. Following the picture, cut the main edges and move them to the correct position. By Extruding some edges and scaling them, we can create the indent (**Fig04**).

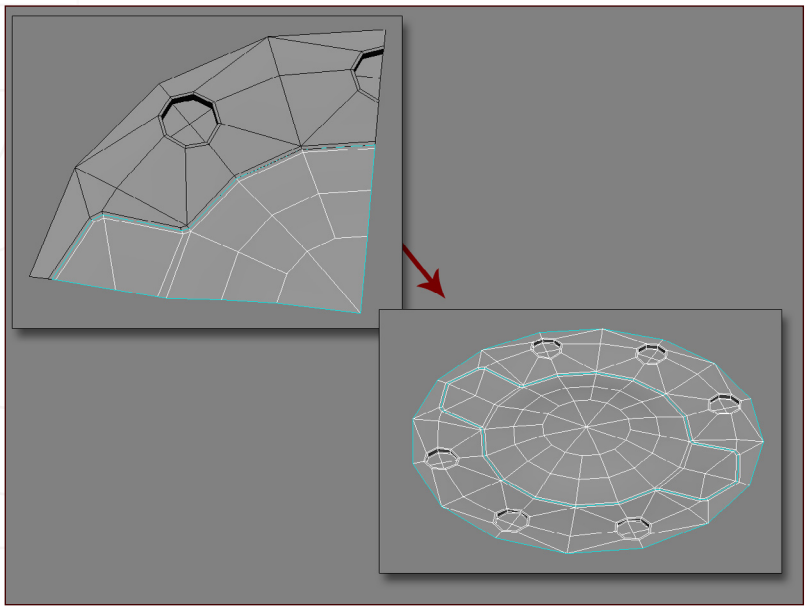


Fig 05

Lets create the other parts of the fuel cap and its frame by cutting new edges and clicking Extract Polygons (delete) (Model Module/Create/Poly. Mesh/). With Symmetrize Polygons (Model Module/Modify/Poly. Mesh/) and by choosing the right axes, you can create the missing sections (**Fig05**).

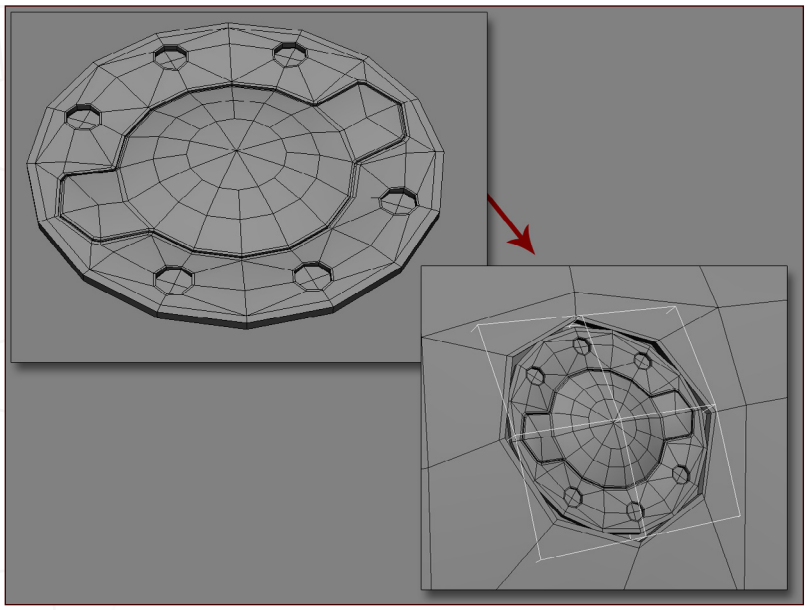
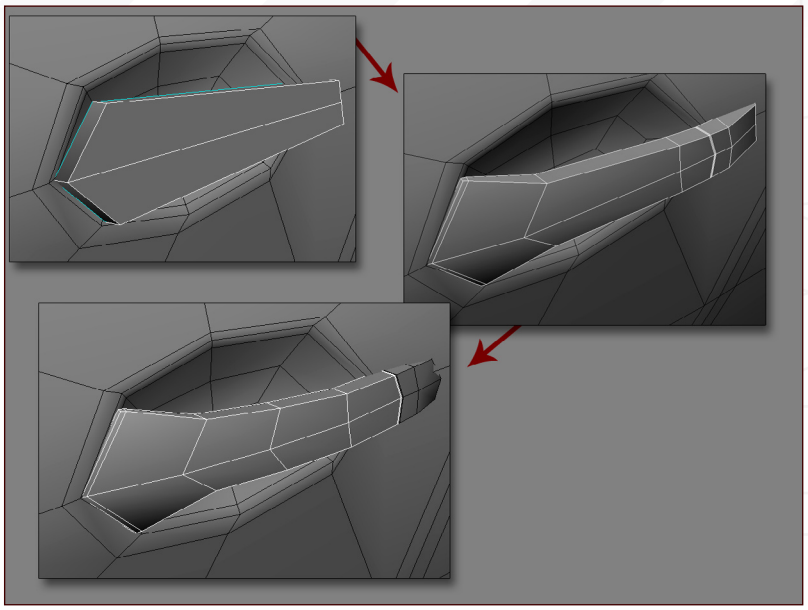


Fig 06

Lets create the rim, then move the fuel cap into the position. In a selected state put a Lattice on it (Model Module/Get/Primitive/) and bend it into the bodywork. Now you can fix the bodywork to accomodate the fuel cap (**Fig06**). Because of the different segments gaps were left, but they can be adjusted nicely after smoothing. In this manner there is no need for cutting into more edges.

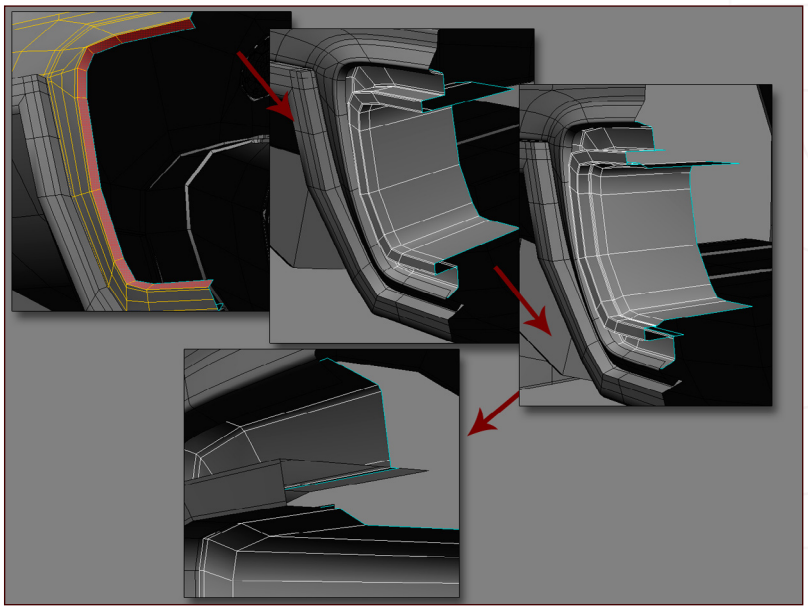
Now lets create the doorhandle. Lets prepare the main shape by starting with a Cube. After adding more detail, Extract it into two objects and add a rim (**Fig07**).

Fig 07



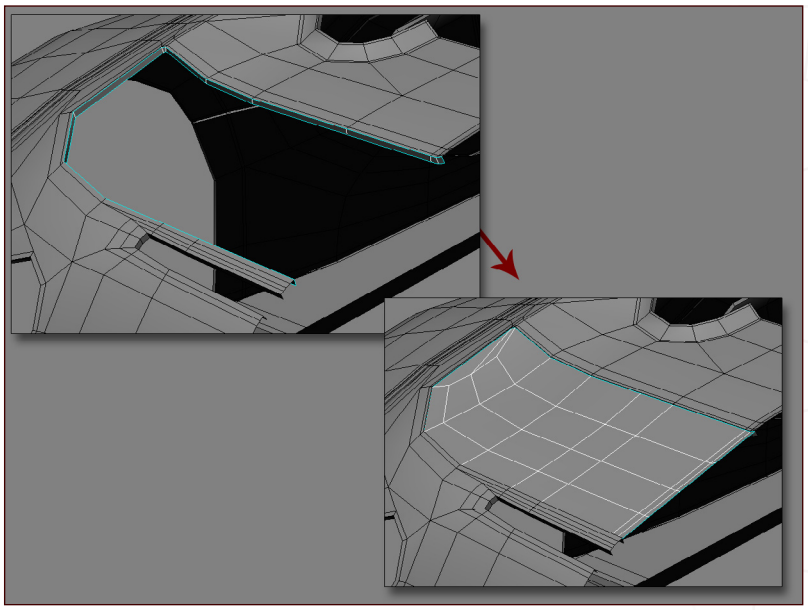
The exhaust can be more easily done if we create it in position. Select the polygons along the bodywork's rim, and click the Extract Polygons (keep) (Model Module/Create/Poly. Mesh/). After this, create the full exhaust by simply Extruding the edges. Extract the inside and outside frames from the exhaust and add the rim (**Fig08**).

Fig 08



Lets move onto the wing. Using the methods previously described, duplicate the border polygons to make the final wing. Create the wings from the bottom margin and detail them (**Fig09**).

Fig 09



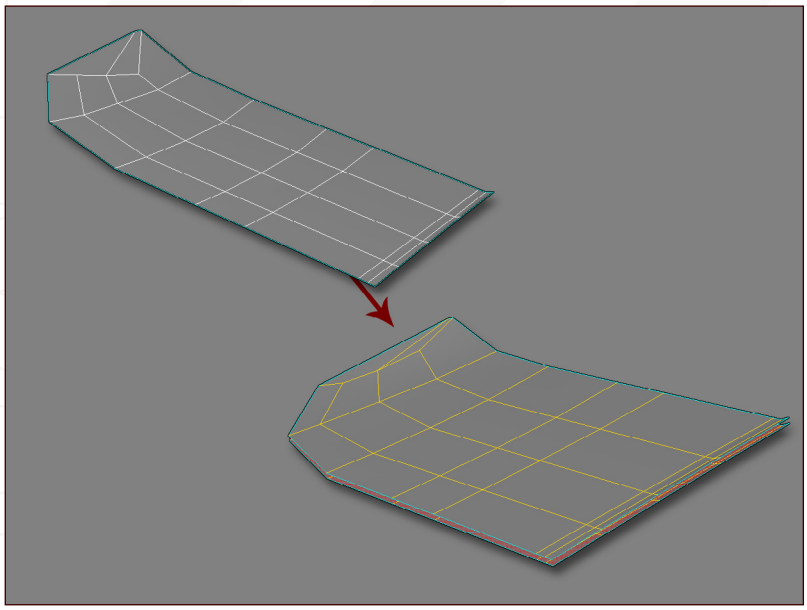


Fig 10

For the easy manageability use the Isolate Selection from the top of the active panel under the Camera icon. Now we can see only what we want to edit and in this case other objects will not interfere. Lets add volume to this panel. First of all select all the polygons and Duplicate Polygons (Model Module/Modify/Poly. Mesh/), and move them next to one another (**Fig10**).

We have now created the top and the bottom of the desired surface. Before we join them, lets modify the bottom panel somewhat.

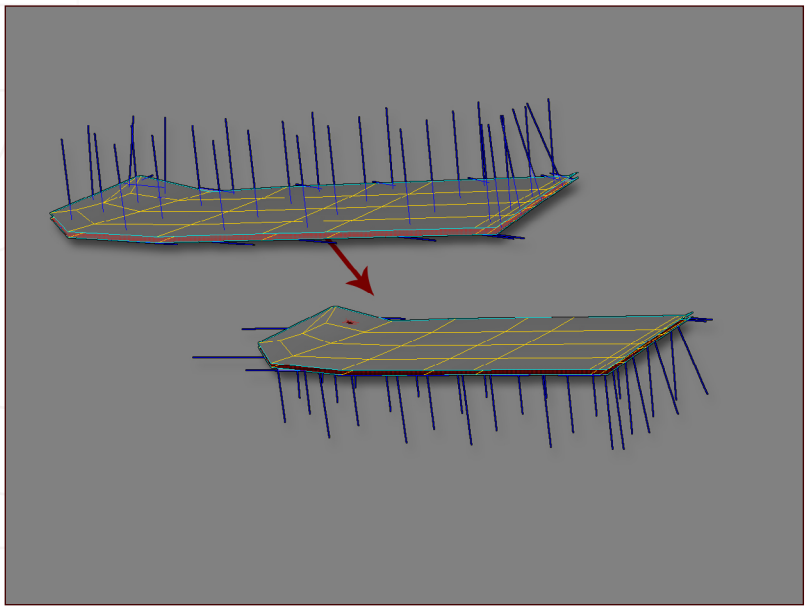


Fig 11

Reveal the Polygon Normals around the top of active panel's Eye icon. You can see that the lower surface's Normals do not go in the right direction. To solve this problem add an Invert Polygons (Model Module/Modify/Poly. Mesh/) to the currently selected polygons which will align them correctly (**Fig11**).

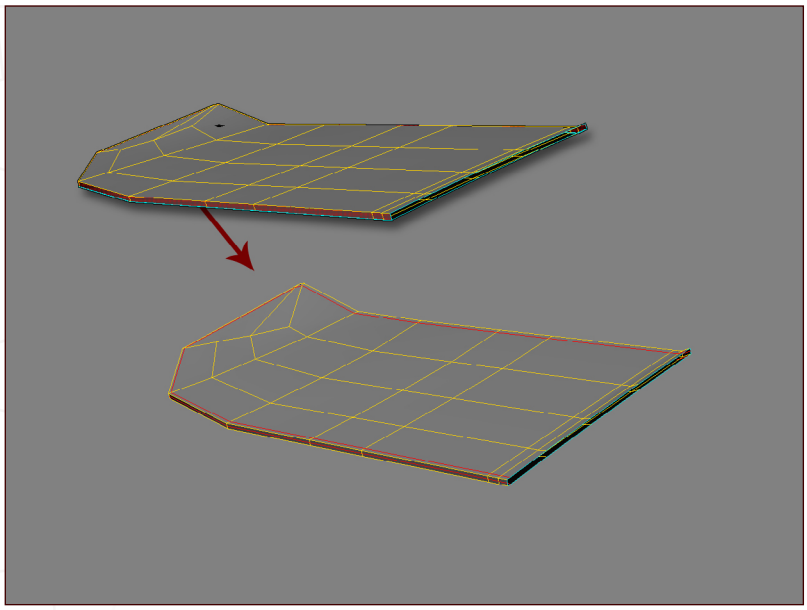
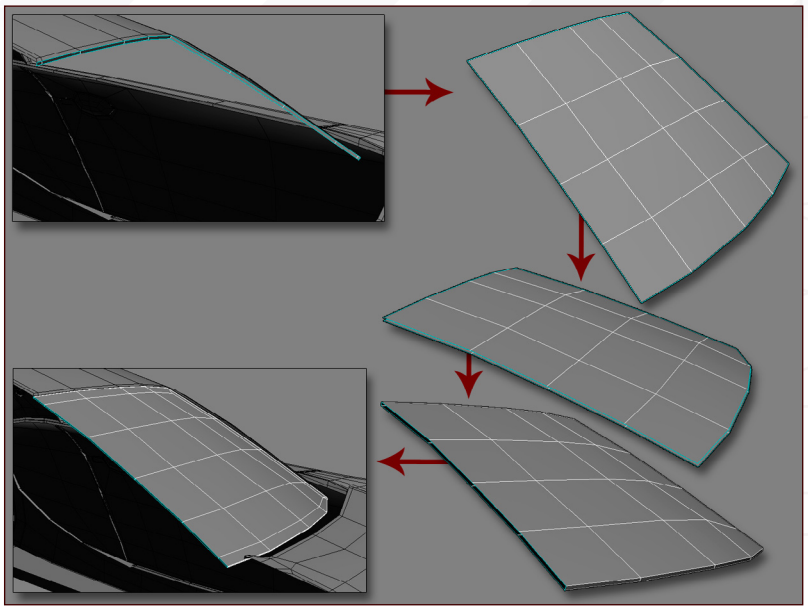


Fig 12

Select the border edges of the top panel, except along the symmetrical axis and extrude down to the bottom panel's border. Then apply the Weld Boundary Points/Edges-t to the whole object (Model Module/Modify/Poly. Mesh/), therefore creating a complete surface. The last step is to add more edges to create sharper corners (**Fig12**).

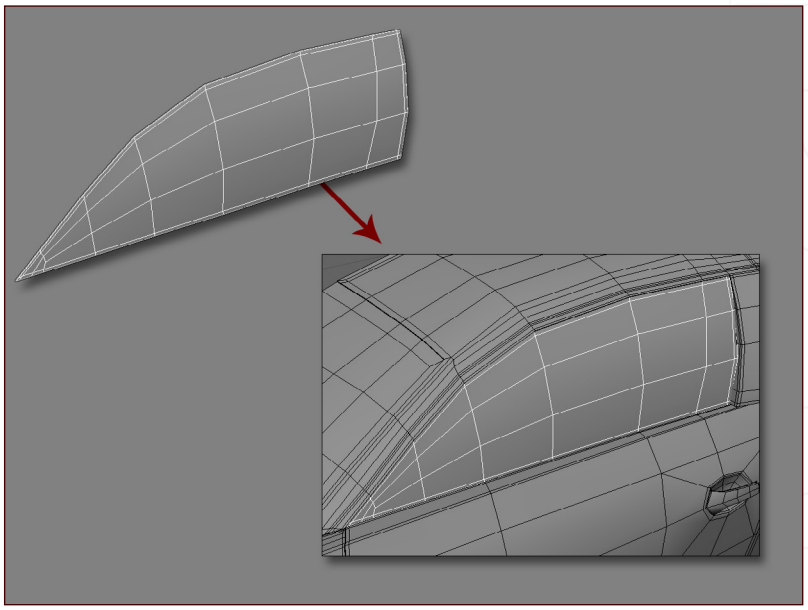
With a similar method, lets make the windscreens. Let's start with the front windscreen. Use the border polygons of the bodywork to create the surface, then add thickness using the previuosly shown methods (**Fig13**).

Fig 13



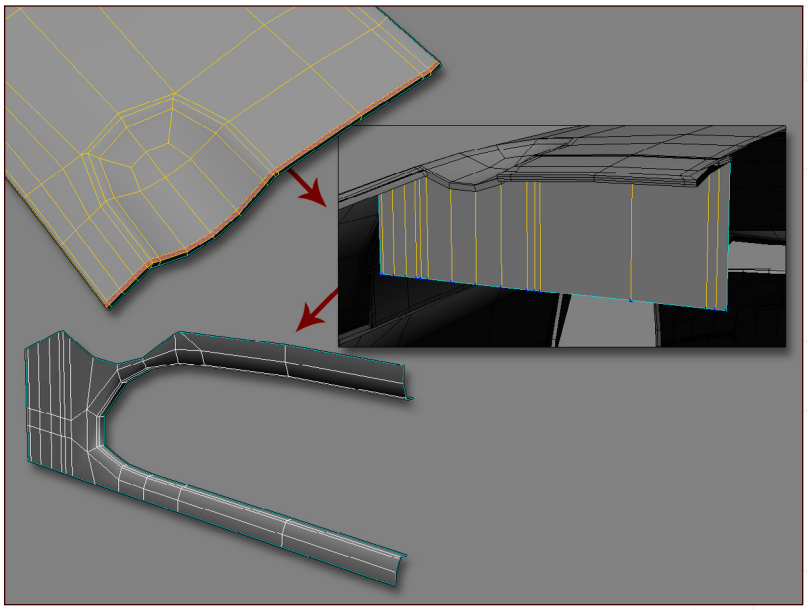
In the same way as described you can do the side windows (**Fig14**).

Fig 14



For the rear windscreen you have to make the framework first. This will not be too taxing, as it is quite straight forward. Begin with the edge of the roof - select the border polygons and then Extract Polygons (keep). Arrange its points, detail it and prepare it for the rear window's placement (**Fig15**).

Fig 15



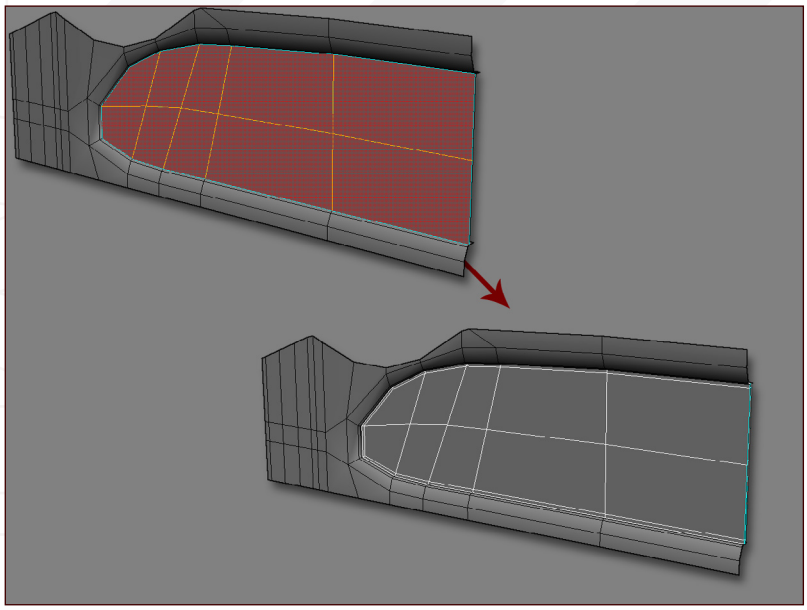


Fig 16

Follow the same procedure with the back windscreen (**Fig16**).

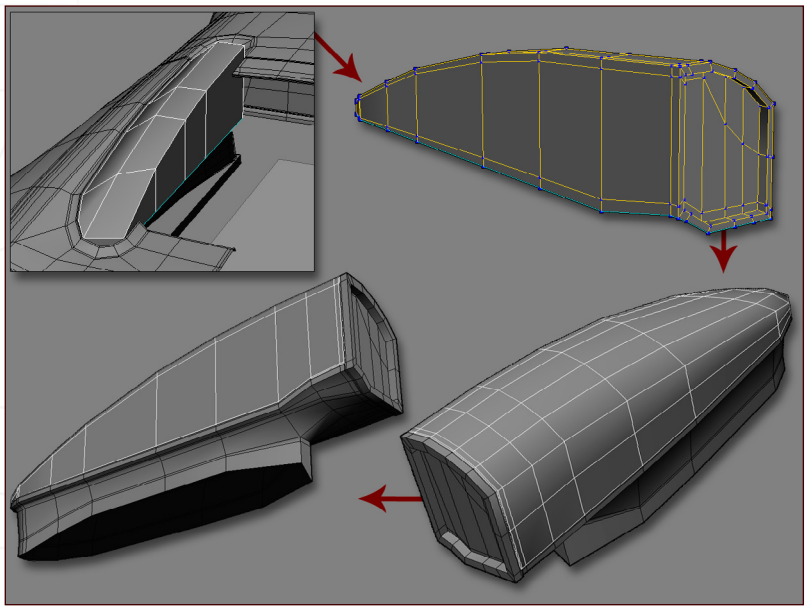


Fig 17

Let's move onto the engine inlet. Start by createing a cube and adding some detail. Add more detail according to the reference photos and then extract them to create more parts and fix the edges (**Fig17**).

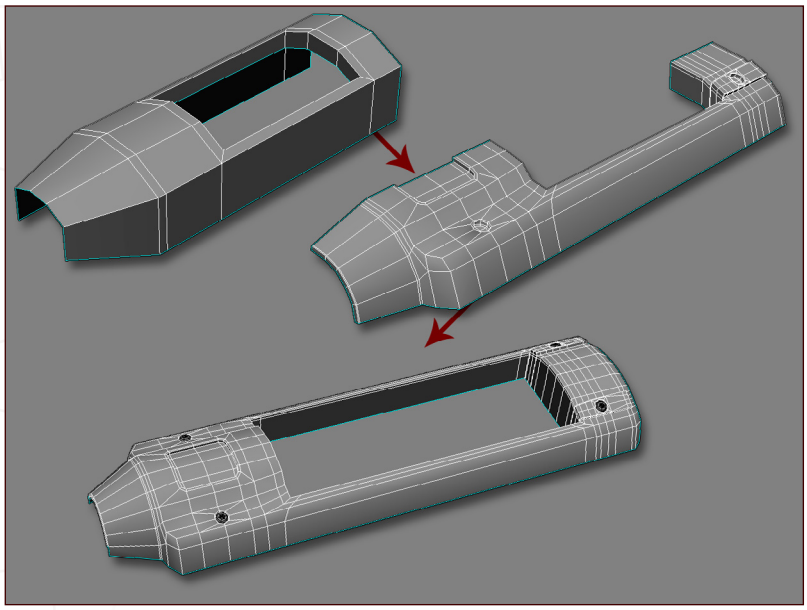
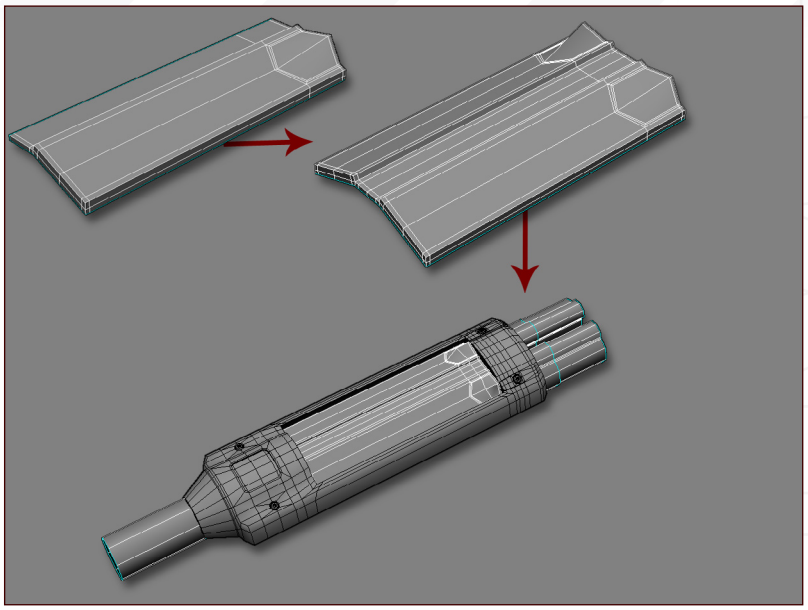


Fig 18

Form the top of the motor block from a Cube, and detail it. It is enough to prepare only one half of this part before using the Symmetrize Polygons. Add some details, screws and fix the edges (**Fig18**).

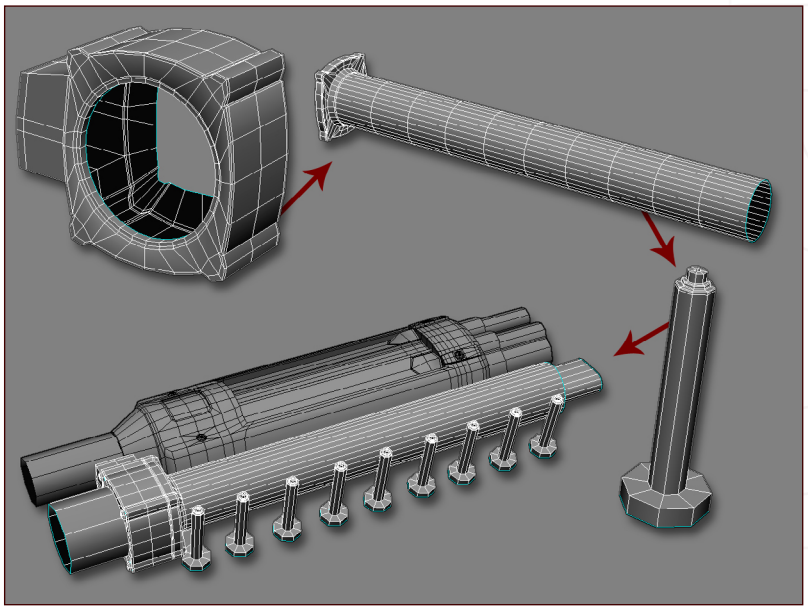
Next step is the detailing of the engine block. Add some pipes usingCylinders (**Fig19**).

Fig 19



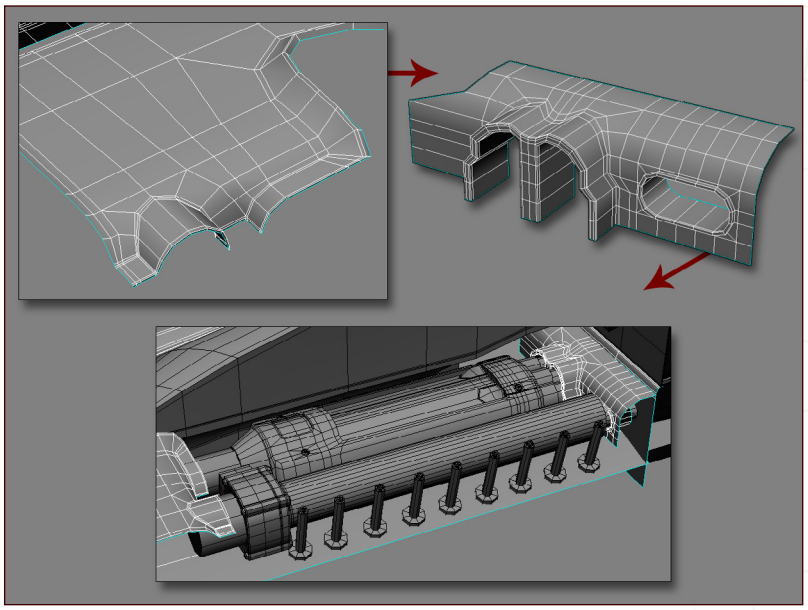
Let's now add further detail to the motor block (**Fig20**).

Fig 20



Adjust the bodywork's geometry for the pipes and add more panels to this (**Fig21**).

Fig 21



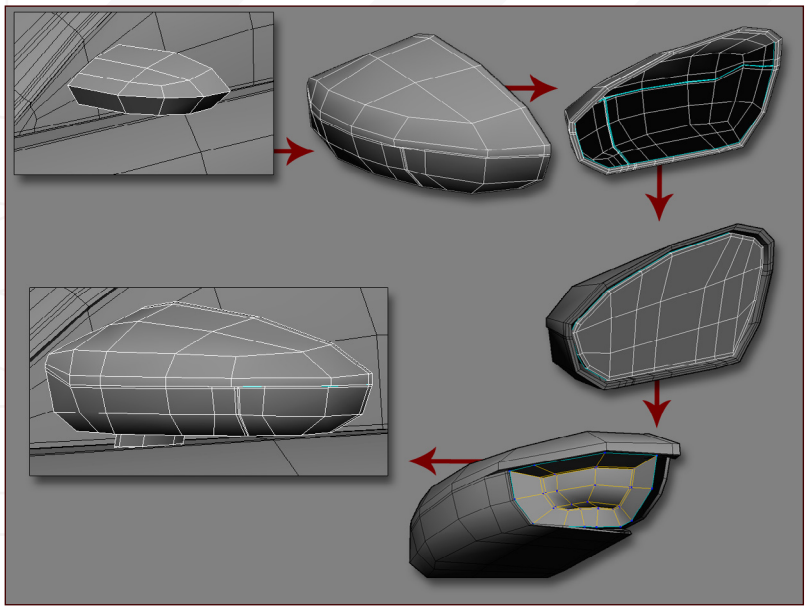


Fig 22

Starting from a Cube lets now make the rear-view mirror. Following the picture, first you make the main shape, then extract it into more parts. Add the mirror. Create the inner part of it and add a rear-view mirror holder, which connects to the door (**Fig22**).

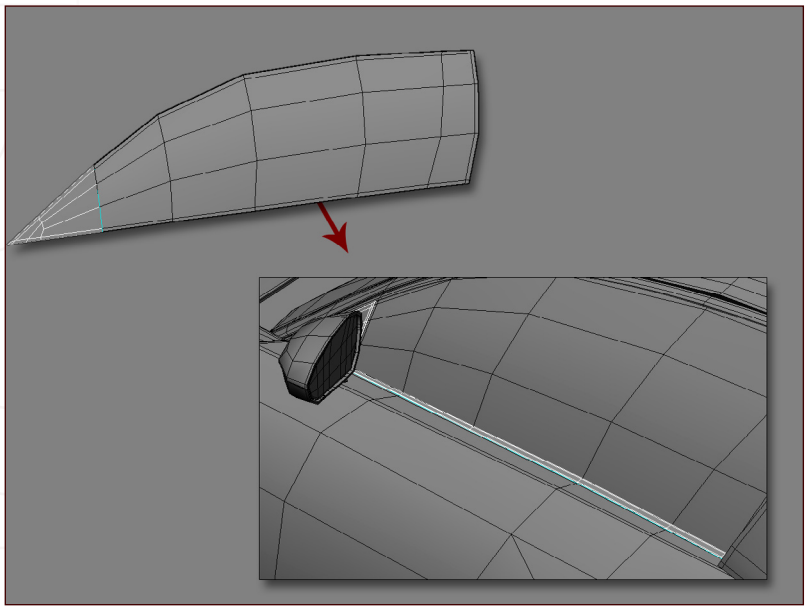


Fig 23

As you can see in the reference photos, the side window ends in a corner. Preparing it is easy, lets extract the corner, rim the objects and position them. Now let's add a gasket stripe between the side windscreen and the door (**Fig23**).

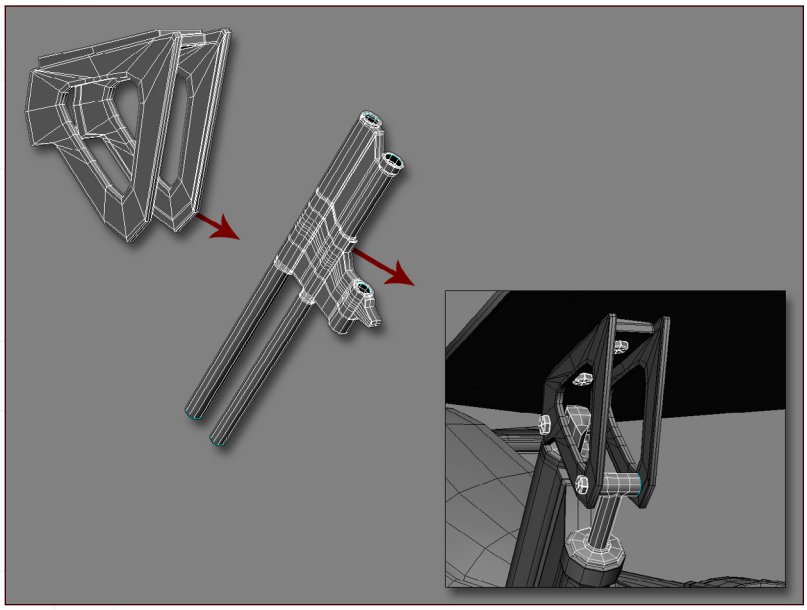
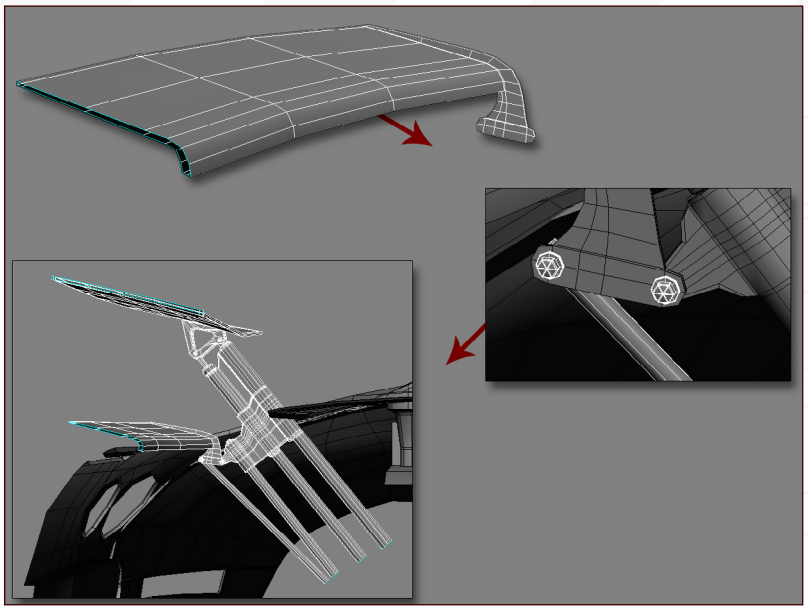


Fig 24

Lets make the wing's holder and accessories (**Fig24**).

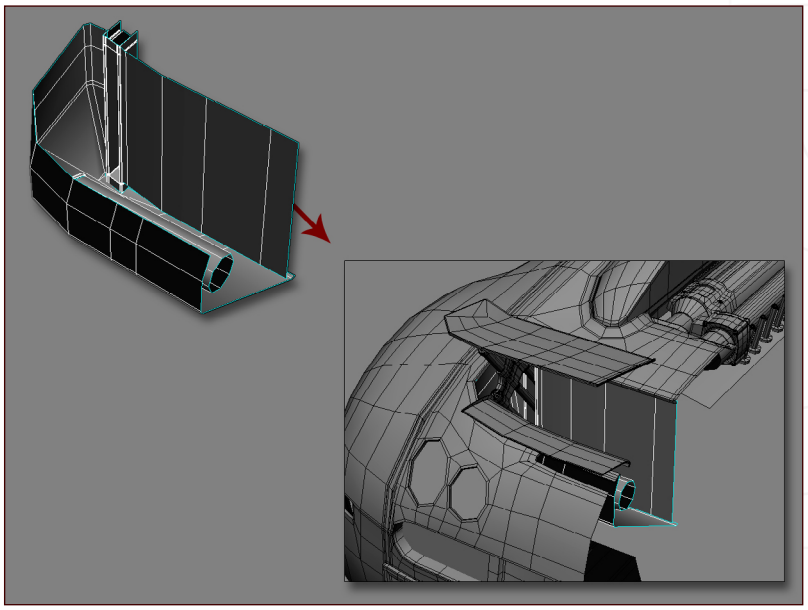
Now add the secondary wing and its holder (**Fig25**).

Fig 25



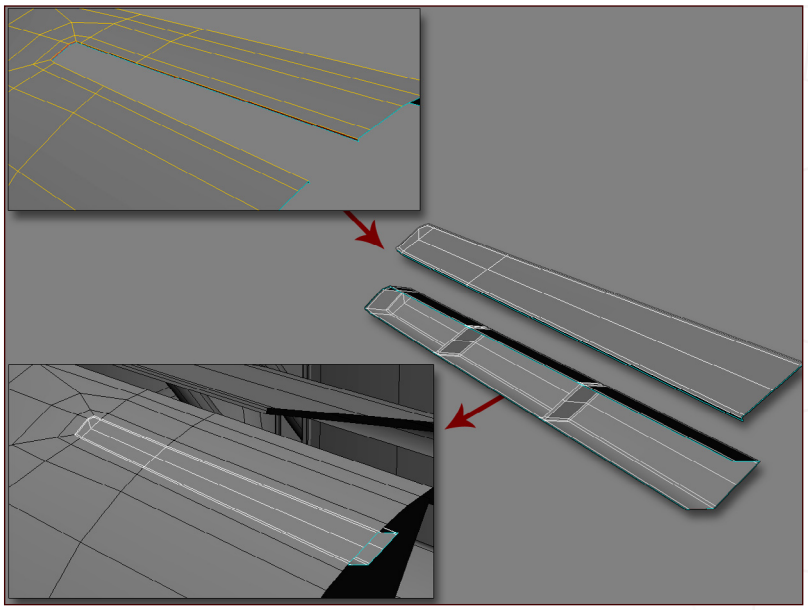
Lets complete the wing container with some grids and covering elements (**Fig26**).

Fig 26



Lets move onto the lights, starting with the back and middle light. Select the border polygons around the position of the light and click the Extract Polygons (keep). Let's now prepare the exterior glass bell. After you copy the glass bell (Ctrl+D), prepare the inner light body (**Fig27**).

Fig 27



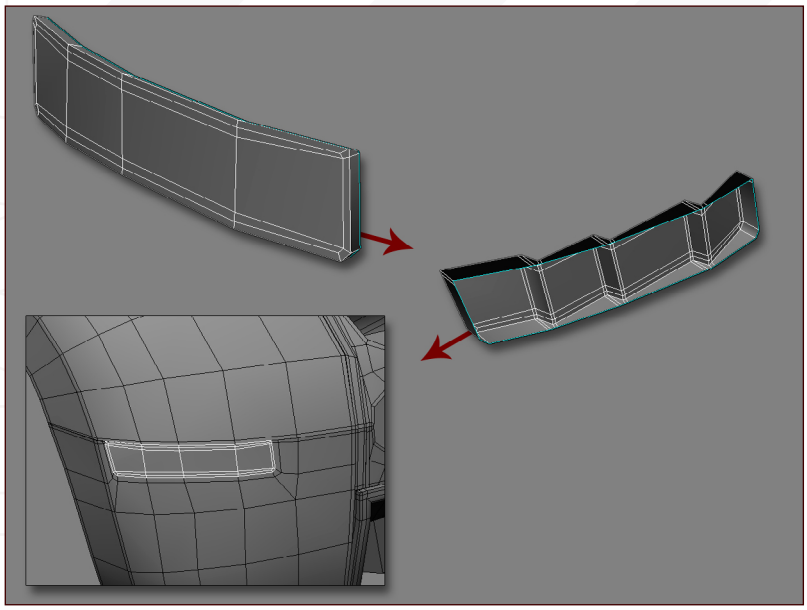


Fig 28

Similarly, make the indicator light too (**Fig28**).

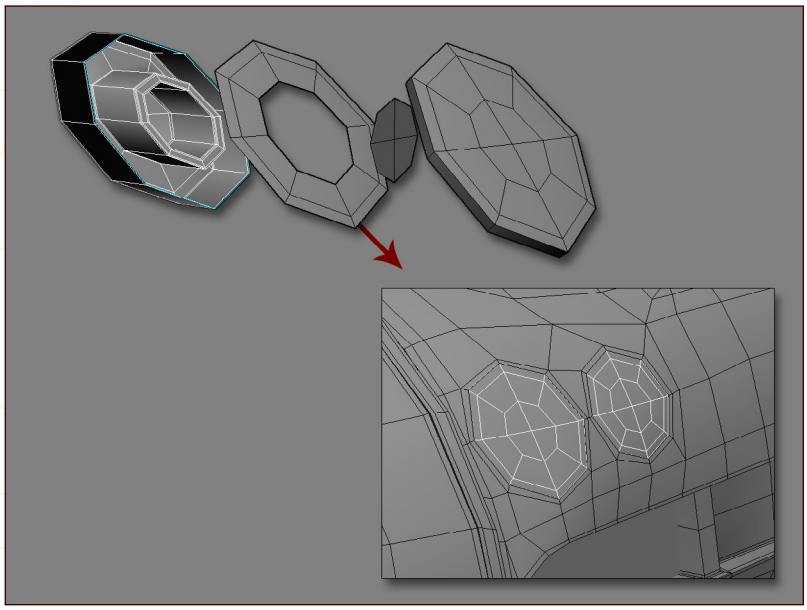


Fig 29

With the methods I've shown previously, prepare the back light cover and from this make the inside of the light, and finally the inner lens (**Fig29**).

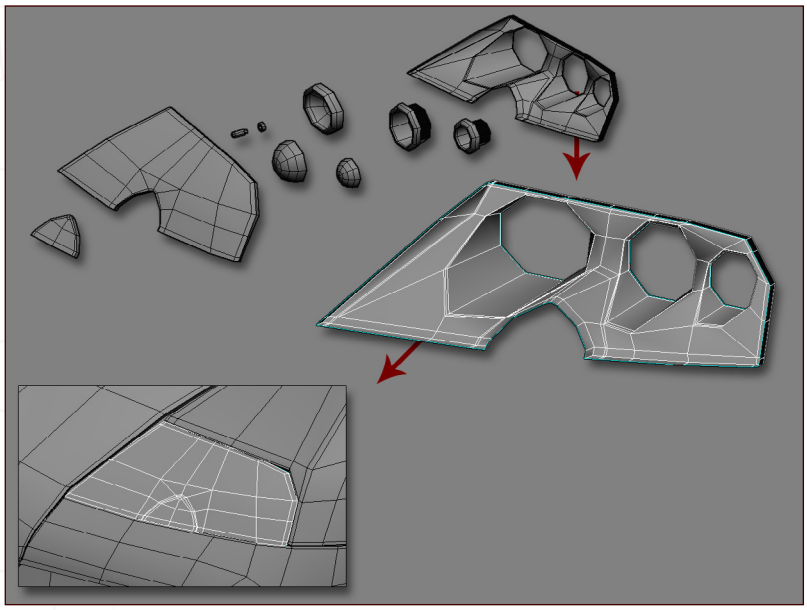
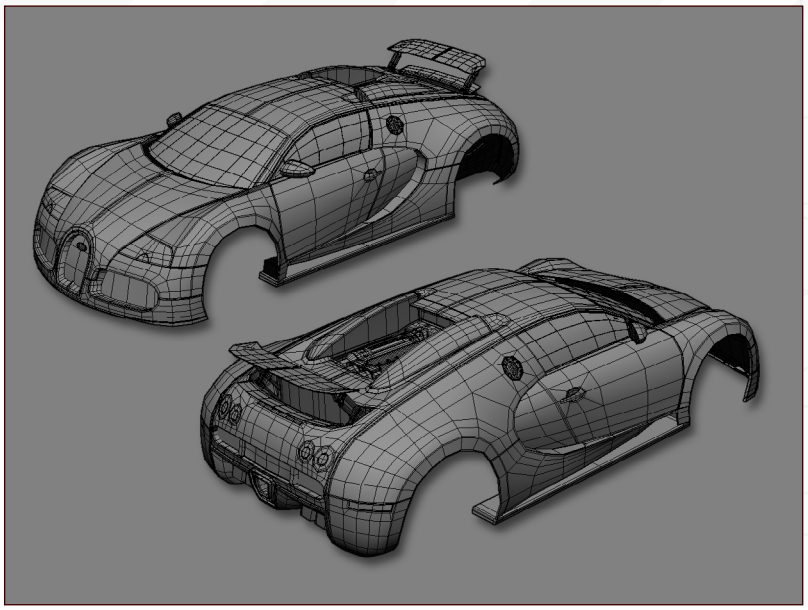


Fig 30

The initial front light is more difficult than the other lights, but similar to the above it can be easily prepared (**Fig30**).

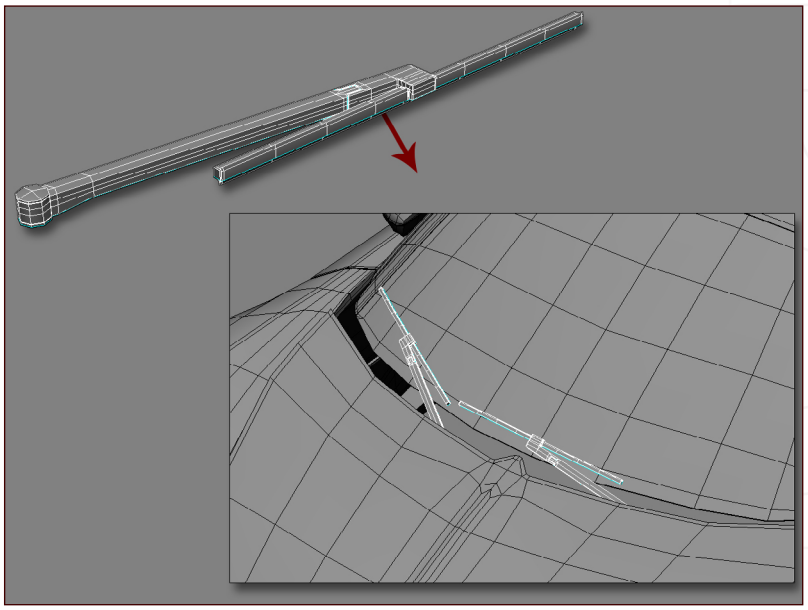
Before we start creating the windscreen wipers, we need to do cretae other half of the car using Symmetrize Polygon (**Fig31**).

Fig 31



Now lets move onto the windscreen wipers. Starting from a cube, detailing them accurately is easy. Eventually move them into their positions and fit onto the windscreen. (**Fig32**).

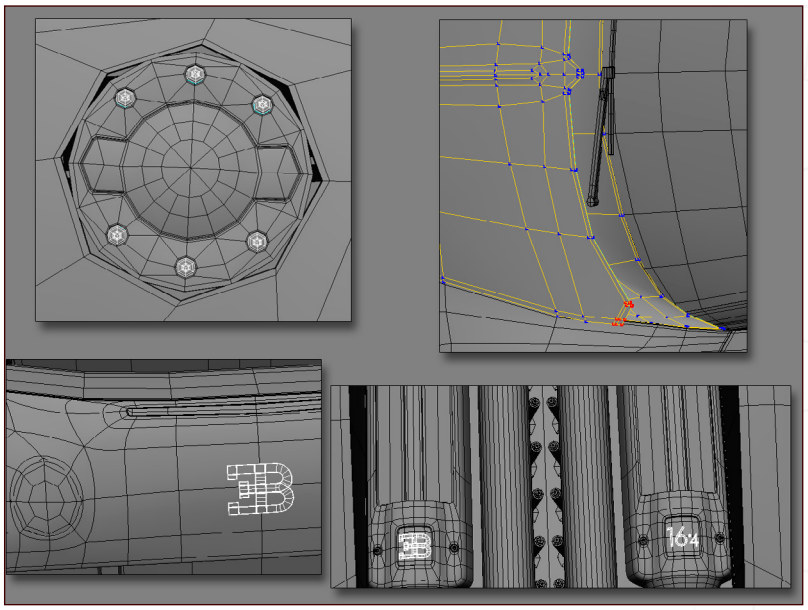
Fig 32



There is nothing left to do but add some accessories and modifications. (**Fig33**). Leave time to check the geometry and correct it where necessary.

Well we have reached the end of the third part. I hope it was interesting and useful to you once again. Next time I will show the method of creating tyres and hub caps, etc. Keep up the good work and see you next time! :)

Fig 33



BUGATTI VEYRON - PART 3:
LIGHTS, RADIATOR GRILL & VENTS

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